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ORIGINAL ARTICLES.

ABSCESS OF THE ORBIT AS THE RESULT OF SUPPURATING ETHMOIDITIS: OPERATION AND RADICAL CURE.*

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In cases of purulent disease of the ethmoid sinuses the natural escape for the pus is into the nasal cavity, where it can be seen beneath the middle turbinated body, or between this structure and the septum; but according to Bosworth,[1] "this is by no means its invariable course, as is shown by the large number of cases in which the pus escapes through the *os planum* into the orbital cavity, giving rise to exophthalmos and orbital disease." The following case is a good example of abscess of the orbit connected with suppurating ethmoiditis, and illustrates certain important and interesting points in regard to the operative technic:

D. S. W., a grocer, aged 67, born in New Jersey, married, consulted me March 25, 1896, in the hope of obtaining relief from disease of the left orbit.

History.—In his early life the patient had been perfectly healthy. About his twenty-first year he was attacked in rapid succession with measles and scarlet fever. As the result of these diseases rhinitis developed, which terminated in the chronic atrophic variety of this affection. He also had inflammation of the middle ear and perforation of the left drum-head.

At the age of 65 the patient had a sunstroke and afterwards much violent headache; indeed, prior to his sunstroke he suffered from brow-ague which was attributed to malaria. For two years before he reported for treatment, and markedly during the preceding year, the headache was located chiefly over the left brow, and was often associated with a swelling at the inner angle of the orbit. For twelve months this swelling had been persistent, and for three months there had been marked diplopia. The patient's habits had always been good. There was no history of venereal disease. His wife and children are healthy.

Examination.—The patient is a medium-sized man, with ruddy countenance, the flush on his face being particularly marked during the periods of severe headache. Physical examination failed to reveal the presence of any disease, save that situated in the orbit and in the rhinopharynx.

Eyes.—R. E. practically normal, with the exception of a small pterygium at the inner side. The refraction was a moderate compound hypermetropic astigmatism.

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[1] DISEASES OF THE NOSE AND THROAT. New York: William Wood & Co., 1896, p. 264.

L. E. The eye was displaced downward, the center of the cornea, being 8 mm. below the level of the center of the cornea of the opposite side, while the face of the cornea was tipped slightly upwards and backwards. There was no direct forward protrusion of the bulbus. Upward movement of the eye was abolished; the other movements were preserved. There was ptosis from edema of the upper lid, which was most marked upon the innet side. An elastic swelling was situated at the upper and inner portion of the orbit, and pressure elicited marked tenderness, especially in the region of the supraorbital notch.

The ophthalmoscope revealed an oval optic disc, slightly grayish in color, and normal retinal vessels. There were no extravasations in the fundus. V. with + 1.50 D. = 6-12. The field of vision for form and for red was normal. There was vertical diplopia in all portions of the field of fixation.

Rhino-pharynx and Adjacent Sinuses.—Examination by Dr. Walter J. Freeman: "There was atrophy of the turbinals, which was more advanced on the left side. The fossæ were lined with thick, dry crusts, but no purulent disharge was seen anywhere. On the left side there was an opening into one of the anterior or middle ethmoid cells, about 3 mm. in diameter, and a smaller one in the right side in about the same position. These were probably the result of atrophy, as the patient asserted that no operation had been performed. There was no abnormal bulging of the walls, nor growth of any kind within the nose.

Transillumination of the antrum of Highmore was good on the right side, but completely absent on the left. The frontal sinuses were shown to be clear on both sides by the same test."

In view of the history of the case, the character of the swelling and the presence of atrophic rhinitis, the patient was told that in all probability he was suffering from an abscess of the orbit connected with either the frontal or the ethmoid sinus, and exploration of the orbit was advised. The absence of fluid pus in the nose, moreover, indicated probable retention in some of the accessory sinuses, which would account for an accumulation of pus in the orbit. As the transillumination-test showed that the frontal sinuses were clear, the evidence strongly pointed to the ethmoid cells as the seat of the disease. Dr. Herman Knapp, of New York, who saw the patient in consultation April 2, 1896, agreed with the diagnosis and the propriety of operative measures.

The edema, not only of the upper lid but of the entire brow as well, rapidly increased, and the swelling previously described daily became more evident. The diagnosis of abscess was now unquestioned and the patient was again urged to submit to operative interference. Consent having been obtained, on April 11, 1896, at the Polyclinic Hospital, assisted by Drs. H. R. Wharton, C. A. Veasey, and Walter J. Freeman, I made an incision through the brow from the inner to the outer angle and opened the orbit. Immediately there were evacuated several ounces of thick, greenish-yellow pus, which had been contained in a pocket at its upper and inner part. The inner two-thirds of the supraorbital margin and a portion of the roof of the orbit were found denuded of periosteal covering, a carious process having already begun in the orbital margin. The pulley of the superior oblique was recognized and found loosely adherent to a fragment of carious bone, which was detached. All diseased portions having been carefully removed with chisel and curet, especially the necrotic area in and around the ethmoid foramina, attention was directed to a small cavity at the upper and inner portion of the orbit, which for the moment was supposed to be the frontal sinus, exposed through absorption of its orbital wall. Further investigation, however, proved that this observation was inaccurate and that the frontal sinus was intact, and, as was subsequently shown, did not participate in the disease, which was confined to the ethmoid sinuses.

The floor of the orbit was now perforated at a point corresponding to the junction of the lachrymal bone, orbital process of the superior maxillary, and the *os planum* of the ethmoid. Through this perforation a probe was passed, to which was attached a fenestrated drainage-tube. The probe was gradually insinuated into the upper portion of the nasal cavity and brought out, together with the drainage-tube, through the left anterior naris.

As transillumination had revealed opacity in the upper part of the maxillary sinus of the left side, it was deemed advisable to tap this cavity through the canine fossa, in order to ascertain whether or not there was a collection of pus. This operation was, at my request, performed by Dr. Freeman, with negative results.

The wound above the orbit was closed with interrupted sutures and a full antiseptic dressing was applied. The subsequent treatment consisted in frequent spraying of the nose with Dobell's solution, hydrogen dioxid and other mild antiseptics according to the circumstances, and washing out the drainage-tube three or four times a day with a solution of mercuric chlorid (1 to 8000). For a few days there was a good deal of swelling of the lid, but perhaps not more than was present before the operation. The vision of the eye was good, the headache was materially relieved, and the temperature at no time rose higher than 101.4° F.

On April 26, the eye had assumed a well-nigh normal condition. The drainage-tube was removed and for it was substituted a drain of iodoform-gauze. Two days later violent headache began, followed by enormous swelling of the upper lid and subnormal temperature. Both the swelling and the headache were greatly relieved by the evacuation of a large quantity of inspissated matter, which apparently came from the anterior ethmoid cells. The gauze drain was replaced by a new drainage-tube.

As the edema did not entirely subside, and as there was much brawniness of the upper lid, indicating deep-seated orbital disease, and furthermore, as there was a distinct sense of fluctuation at the outer side of the orbit, the temporal side of the old incision was opened and a large quantity of pus, which had accumulated in a pocket on the outer side of the orbital cavity, was evacuated. Some more carious bone was discovered and curetted away, and an additional drainage-tube, passing across the orbit from one angle of the wound to the other, was inserted.

From now on the recovery was practically uninterrupted, the treatment consisting, as before, of daily irrigation through the drainage-tubes and constant attention to the naso-pharyngeal disease.

On May 23, or ten days after the second operation, the drainage-tubes were replaced by silkworm-gut. On June 2 all drainage was removed, and on June 11 the patient was discharged from the hospital, with the wound healed in all portions, except at the inner angle, where a small sinus remained, about two inches in depth, leading apparently to the ethmoid cells.

This sinus continued to discharge a drop or two of pus for about six weeks, when, under the influence of gentle packing, it gradually closed. For a time some edema of the upper lid and the brow remained. This gradually subsided, and the diplopia, which was typical of that caused by paralysis of the superior oblique—all of the classic symptoms of this palsy being present—slowly disappeared. At the present time, more than a year after the operation, it is difficult to develop diplopia, even with the aid of a red glass. There are no ophthalmoscopic changes, and the function of the eye is perfect in all respects. The lid and eye possess normal movements, the growth of the eyebrow has covered the scar, the patient has been entirely free from headache, the atrophic rhinitis has greatly improved, and there is no purulent discharge within the nasal fossæ, showing that the cure is radical.

The exposure of the diseased area in a case of this character is a matter of ordinary operative interference and requires no comment, but much interest centers in the proper method of drainage after the orbital abscess has been evacuated and the diseased tissue of the sinus as thoroughly as possible removed. The experience derived from this case, and from others that have been reported, proves the value of drainage of the diseased area through the nose. Precisely as in operations on the frontal sinus, the best results follow the plan that establishes by means of drainage a communication between the sinus and the nose. It would seem, however, that when the orbital disease has become extensive and the infiltration of purulent material widely disseminated through the soft tissues, an additional drain is advisable in the manner in which it was applied at the second operation. Were I to meet with another example of this affection, presenting like clinical characteristics, I would establish nasal drain-

age and also drainage from the outer side of the orbit at the same time. There seems no doubt that the main abscess, which was primarily evacuated, had existed for a sufficient length of time to be walled off from the deeper tissues of the orbit, and by pressure to have caused an indentation of the inner orbital wall, which gave the impression of an open frontal sinus. The pressure having been relieved, areas of purulent infiltration existing further towards the apex of the orbit spread forward as time wore on and occasioned the second abscess, which was later evacuated and drained. The drainage-tubes placed in the manner related afforded the opportunity of constantly irrigating all of the diseased tissues with antiseptic fluids, which flowed freely through their fenestrations. Thus not only the original focus of suppuration in the ethmoid, but the secondary foci in the orbit were continually disinfected, with the happy result of producing what may certainly be described as a radical cure; for, as Dr. Freeman has pointed out, the absence of fluid pus in the nose shows that the disease has been entirely cured, and not merely that the old original passage into the nose has been re-established, as is usually the case. Touching this question of drainage, reference may be made to a case reported by Adelheim[2] of mucocele of the ethmoid cells, which underwent suppuration after accidental infection from the nose, thoroughly cured by an operation that opened the inner wall of the orbit, leading into the ethmoid cells, which were scraped out and the cavity drained by a T-formed tube, one part of which was brought out through the nose. Although it is not definitely stated, it is evident that the other portion of the tube came through the orbital opening.

A second interesting and gratifying fact is the rapidity with which the tissues regained their normal functions. In less than three months after the operation everything was solidly healed, even the small sinus which persisted and which led to the ethmoid sinuses having closed.

In a case of extensive orbital involvement as the result of ethmoid disease, such as I have described, there is of course only one way to attack the affection: that is, in the manner already described, by an operation through the orbit. It is, however, also pertinent to urge, in the words of Gruening,[3] "surgical procedures from the orbit in cases of uncomplicated empyema of the ethmoidal cells." In fact, as this surgeon states, "it seems advisable to substitute more frequently the orbital for the intra-nasal operation, even in the earlier stages of purulent ethmoiditis, the evident advantages of this operation being the possibility of direct inspection and exploration of the ethmoid spaces, the greater facility of removing granulations, polypi and carious bone, and the improved chances of securing drainage through the nose by perforating the floor of the ethmoid body."

It is unnecessary in the present communication to elaborate the ophthalmologic symptoms in general ethmoid disease. Those interested may consult with profit a paper on this subject by Dr. Thomas R. Pooley.[4] To one class of cases, however, I would like to call attention, namely, those of fistula of the orbit above the internal canthal ligament due to disease of the ethmoid. These have been described by Gruening,[5] and he has effected a cure by forcing, with a strong probe, an opening through the base into the nasal cavity, thus facilitating drainage through the nose. In a recent case of this kind under my care, and by my request also examined by Dr. Walter J. Freeman, the sinus is in exactly this position, or perhaps a little lower down, and through it a probe may be passed either into the anterior frontal cells, or else directly into the ethmoid, and from the latter situation into the nasal cavity. Cases of this character have sometimes been mistaken for instances of lachrymal disease, and, in fact, they present some of the characteristics of the so-called prelachrymal abscess. The evident treatment, however, is the one recommended by Gruening, or perhaps a more formal operation, in which the diseased area is exposed through a curved incision, the carious bone removed, and both external and intranasal drainage established.

[2] *Archives of Ophthalmology*, New York, 1897, XXVI, pp. 142-143.

[3] New York Eye and Ear Infirmary Reports, 1895, III, Part I, p. 21.

[4] *The American Journal of Ophthalmology*, St. Louis, 1897, XIV, pp. 100-106.

[5] New York Eye and Ear Infirmary Reports, January, 1896.

THE USE OF ELECTROLYSIS AND THE GALVANO CAUTERY IN THE TREATMENT OF DISEASES OF THE NOSE AND THROAT.*

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Among the most valuable therapeutic measures used in the treatment of diseased conditions of the nasal cavity, pharynx and larynx, the electric current in its various forms occupies a very prominent place. The electrolytic and the galvano caustic power of the current are the two most commonly used at present, and it is to them that I shall give especial attention in this paper. Electrolysis and the galvano-cautery have been employed occasionally in the treatment of diseases of the throat and nose with more or less success by prominent men in this special line of work for many years, but recent publications and the transactions of special societies show the employment or non-employment of these methods to be, so to speak, a question of the day among rhinologists and laryngologists. Most distinguished names are found among the advocates of these methods, but there are perhaps just as many and just as distinguished names in the line of opposition. Furthermore, the improvements in the construction of batteries and accessories, and particularly the reduction in their cost, brings these instruments within the reach of general practitioners, so that their employment by the latter is growing more and more popular, in fact more so than is entirely desirable in the interest of the patient.

I have been using electrolysis and the galvano-cautery in the treatment of the nose and throat for the last six or seven years, and in quite a number of cases I have been able to follow the results for some years after the treatment had been discontinued. In this communication I shall present the results of my observations in that direction, and shall call attention to some points of interest relating to the subject.

Electrolysis has been used, in the first place, in cases in which more or less large masses of heterogeneous tissue have been found to occupy the vault of the pharynx. Such collections generally close up the entrance to the choanæ and spread into the nostrils, producing here very considerable obstruction. Cases of this kind are not numerous, and therefore reports of real value can be expected only from men with very large experience in treating diseases of the nose and throat. In June, 1895, Dr. J. Solis Cohen presented a paper to the Philadelphia County Medical Society entitled "Electrolysis in Rhinopharyngeal Growths," expressing his views upon this subject based upon an experience of more than a quarter of a century. Conformably with other authors, Dr. Cohen considers the use of electrolysis in the treatment of the condition named as a therapeutic measure of great value, and as the only method of treatment in otherwise inoperable cases. I have had an opportunity of seeing and studying for quite a while a patient with a large tumor in the nasopharynx treated by Dr. A. W. Watson at the Philadelphia Polyclinic and a full history of which will be published by him in due time. I am, however, permitted to state that in this case, too, electrolysis has proved to be the only treatment that has proved of real value. It reduced the size of the tumor progressively while the patient was under treatment and when he was compelled to leave the city for about ten months it was found on his return that the absorption of the tumor inaugurated by the electrolysis, continued during this time to a noticeable degree.

Another class of cases in which electrolysis has been used exhibit frequently thickenings and deviations of the septum and particularly combinations of both. There is no question, to my mind, that when there is a spur on the septum, producing obstruction in the nasal chambers and all the consequent annoying symp-

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toms, the best way to get rid of it is to remove it by means of a saw. Likewise there can be no question that the best way to treat a deviation of the septum is by straightening it by one or other of the available methods. This is a radical kind of treatment, and from a theoretic point of view has no equal; it also yields very good results practically in a large number of cases. There are, however, cases in which for one or another reason the employment of either of these methods is impossible or undesirable. In the first place this is particularly the case when complicated combinations of both spur and deviation are present, and in the great majority of cases of this kind it can be predicted at the outset that the results to be obtained from the employment of the radical methods mentioned are more than problematic. On the other hand there is also a very considerable number of what might be called mild cases, in which the saw, the knife and forceps would be just in place, but in which none of them could be made use of for the reason that the patient objects, having an aversion to any bloody operation whatever. It is of great advantage, for this class of cases particularly, and for those already named as well, to possess a method that although perhaps inferior to the cutting operations is, nevertheless, far superior to the swabbing and dusting procedures frequently used, and often yields good results and here and there complete satisfaction. Such a method is found in the use of electrolysis. By means of this, making use of a bipolar electrode, we are able to remove small spurs and to reduce considerably the size of large ones; we are also able to level one or more thickenings on a deviated septum on one or both sides. In all cases of this kind we gain more space for breathing purposes, and this is just the object sought by the patient. This gain in breathing space is not a temporary one, as is usually the result of the minor procedures, but a permanent one and the patient is perfectly satisfied. I have treated a number of cases in that way and a most striking one was under my care quite recently.

Mr. W., aged 39, had been suffering for a number of years from dryness of the throat. He complained also of the nose being stopped up more or less all the time, but most severely when in bed. On awaking at night he would always find himself breathing through the mouth. Some three years ago he was advised by his family physician to consult a specialist, but according to the patient's statement he was treated by the physician regularly twice a week for over two years, with two free intervals of about four months each in the summer. The treatment consisted mainly in applications of: First, a solution of cocain, and later some iodin solution to both nasal chambers. This would give him some relief for a short time, but the old condition would soon return. When I first saw the man he considered himself in as bad condition as ever. Upon examination I found that the cause of the trouble was in the septum, which was deviated to the left in its upper part and to the right in its lower part. There was considerable thickening on the convex spots on both sides. The patient objected to any kind of bloody operation and I tried electrolysis. He was under my care for about seven or eight weeks, during which time electrolysis was applied six times. The breathing became much easier generally and also at night, and the feeling of dryness in the throat considerably subsided. I then advised the patient to suspend the treatment for awhile, and let me see how the conditions would be in a few weeks. I saw him again after about three months, when he came to consult me about his wife and in response to my inquiries he stated that he had been feeling more comfortable than ever. On examination I found the breathing space if changed in any way to be somewhat more roomy than at the time treatment was stopped.

I shall pass now to the object of the galvano-cautery. In the nasal chambers the galvano-cautery has been applied mainly to the turbinated bodies, in the first place to the inferior. In cases of hypertrophy of the inferior turbinate we have, in the great majority of cases, to deal with hypertrophy of the soft tissues that cover the turbinated bone. The treatment for this condition consists in the local application of different variations of solutions of iodin, in cauterization with perles of chromic acid and of later years in cauterizations with trichloracetic acid. There is, however, hardly any

diversity of opinion among rhinologists in relation to the fact that far better results can be obtained with the aid of the galvano-cautery. The advantage of the galvano-cautery is, in the first place, that we can make the application superficially or we can penetrate into the tissues as deeply as we find it necessary in the given case. Secondly, we can localize our application to just that point at which we want it and not have it diffused over a larger area, as is generally the case when we use acids. The cauterization is always followed by more or less inflammatory reactions and the formation of an eschar. I have repeatedly been able to trace the cause of a synechia in the nasal chamber to such an eschar, and for this reason I consider it of great importance in using the galvano-cautery point or the so-called knife to select for the application a point or a line that is not liable to come in close contact with the septum. By making the necessary application on the inferior or on the frontal border of the turbinal I am sure a synechia can be avoided. In cases of hypertrophy of the middle turbinated body the conditions present quite a differnt character. Here we find the hypertrophy confined in most instances to the bony part and the reduction of the redundancy is best effected by means of the snare. Should it be found, however, that the cause of the hypertrophy is in the mucous membrane, then of course an application of the galvano-cautery would be indicated.

Passing now to the indication for the use of the galvano-cautery in the pharyngeal cavity we need to mention but briefly the benefit to be derived from its employment in cases of so-called granular or follicular pharyngitis, and in cases of venous congestion. The destruction of the inflamed follicles and the obliteration of varicose veins in the mucous membrane of the posterior wall of the pharynx by means of the galvano-cautery are procedures too well known to be dwelt upon in the limited space of this paper. The great benefit to be derived from using the cautery in different pathologic conditions at the base of the tongue I have discussed in another paper. There is also apparently no diversity of opinion about the advisability of applying the cautery to the tonsils in cases of mycosis and other pathologic conditions in the lacunæ.

A subject of very great interest at the present time is the question of excitation of the faucial tonsils by means of the galvano-cautery snare. Up to the present we find here and there announcements of improvements made in the construction of tonsillotomes and of different new kinds of scissors devised for the same purpose, and it seems as if some operators are perfectly satisfied with the removal of the tonsils by these means. The literature of recent years shows, however, that there is undoubtedly a tendency among a great number of laryngologists to set aside these bloody operations and substitute for them the galvano-cautery snare. For the last four or five years, during which time I have been connected with Dr. Watson's department in laryngology at the Philadelphia Polyclinic, the tonsillotome has been used exclusively, and I must state that in the vast number of cases operated on by Dr. Watson and by others, in not a single one have any bad consequences occurred, and the conclusion can be justly drawn that in skillful hands the results of operation with this instrument are very satisfactory. On the other hand I have during the same years used in my private practice the galvano-cautery snare exclusively, and the results obtained have in every instance been of a most satisfactory character. The oldest patient on whom I operated with the snare was about forty years and the youngest eleven years old. In the beginning I always used to extirpate only one tonsil at a time from a fear of causing much pain, until on one occasion I had to operate on a very capricious young boy, twelve years old. The operation required quite a good deal of time and persuasion on my part as well as on the part of the parents to get the boy's consent. I removed the right tonsil with very little inconvenience to the patient and was talking to the parents about the advisability of removing the other in a week or so. The father, however, knowing his boy well, suggested that I try to remove the other tonsil also at once, because if the boy should suffer any inconvenience whatever it will be impossible to get him to submit again. I removed the left tonsil also, and to my surprise the

pain during the next few days was less than in any case I had previously operated on. Since that time, when necessary, I have always removed both tonsils at one sitting, and so far have never had any occasion to regret such action. For local anesthesia I have used a ten per cent. solution of cocain. For the last seven years I have used the so-called single cell cautery battery made by Flemming and also the handle of the same maker, with the irido-platinum wire attached. During recent years the storage battery has been most frequently used, but as the ideal storage battery does not seem to have been invented yet I think that at present one kind of battery gives as much satisfaction as another. The ultimate results here, as in other branches of surgery, depend not so much upon the instruments used as upon the character of the case and skill and experience of the operator. The question now naturally arises: Is there any advantage in using the galvano-cautery snare instead of the tonsillotome? In answering this question it is well to remember, in the first place, that at all times it should be the endeavor of the surgeon to perform operations with as little loss of blood as possible, and a considerable advance has been made in this direction from the time when the elastic bandage —as simple as it is ingenious—was introduced into general use by Esmarch. Not having to keep in mind the possibility of a fatal hemorrhage or serious shock from great loss of blood the surgeon undertakes a good many operations to-day in cases in which he would or could not have done so before. On the other hand, a good many patients more readily submit to operations when they can be positively promised that the loss of blood will amount to nothing. A great many patients suffering from the effects of large faucial tonsils do not submit to their removal with the tonsillotome only from a fear of serious hemorrhage. In the use of the galvano-cautery snare we have a method with which it is possible to assure the patient that no bleeding after the operation will follow, and this is a very great encouragement to him. That this also is a source of great relief to the mind of the operator it is hardly necessary to mention.

It has been brought forward as an argument against the use of the snare that it is not possible to perform the operation so quickly as with the tonsillotome. In my experience this is not the case. On two occasions, when I had a friend present during the operation, we found that, from the time that the snare was in position until the tonsil was out of the patient's mouth, there had elapsed in one case thirty seconds and in the other less than forty seconds; and I feel sure that in other cases it took less time than that. In a recent paper published in the *Laryngoscope*, Dr. Gibb has pointed out different types and groups of enlarged tonsils and has expressed his views as to when the snare could be used with advantage and when the tonsillotome is to be preferred. In my opinion the galvano-cautery snare could be used in all cases in which the tonsillotome can be applied. I have not had the opportunity of operating with the snare on subjects under eleven years of age for the reason that I have not had a case under that age in which the operation could be performed without general anesthesia. It is only natural that those skillful operators that have been successfully operating on children with the tonsillotome for ten, fifteen, or twenty years hesitate to adopt new methods; nevertheless I have reason to believe that under proper general anesthesia also in children the use of the galvano-cautery snare would prove of great advantage, as it is already reported by those that have used it. The employment of electrolysis and the galvano-cautery in the treatment of diseases of the nose and throat is just as much to be studied and intelligently practiced as similar employment in other branches of medical work. The great success obtained with the tonsillotome on the one hand and the great harm that has been and is being done occasionally with electricity on the other hand do not prove anything against the latter. They confirm only the fact that the inventors and possessors of the largest number of new instruments are not always the best operators. In the hands of a skillful and thinking operator the old kind of instruments will almost always yield better results than the newest kinds of instruments in the hands of unskillful and automatically working men depending altogether upon their good instruments.

THE RADICAL CURE OF MALIGNANT DISEASE BY THE CATAPHORIC DISSEMINATION OF MERCURIC SALTS; A FURTHER CONTRIBUTION.*

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This paper is a further contribution to the subject of a radical cure of malignant disease as published in a paper read before the American Medical Association at its recent meeting in Philadelphia, and in certain previous publications during the past four years. The substance of it is corroborative of the announcement more particularly made in the last paper that mercury may be disseminated throughout a malignant new growth from the positive pole of a galvanic current, provided the electrode consists of one or other of certain metals, the mercury penetrating the flesh in the immediate neighborhood of the electrode as a nascent oxychlorid. It will also relate an additional discovery to the effect that I have determined the superior qualities of gold as the substance of the electrode from which the mercury is disseminated.

The method by which mercury is disseminated throughout a morbid mass is dependent upon the electro-physical fact that any positive electrode of base metal will be eroded when it is used to transmit a current through an electrolyzable material such as flesh or tumor-substance, the oxygen and chlorin produced at this pole by electrolysis uniting with the metal to form oxychlorids. Simultaneously with their production these oxychlorids are repelled from the positive pole through the electrolyte towards the negative pole. An oxychlorid of a base metal thus produced at the positive pole of a galvanic current is made to pervade the immediate neighborhood of that pole to a distance proportional to the volts and time of application, and to a density and amount proportional to the millicoulombs of current. These facts have all been known for a long time, though much neglected in their possible therapeutic application, particularly when it is recalled that the salts thus capable of being injected into the exact spot we wish them, and in any dose to suit us, without affecting the rest of the body, are in their nascent and hence most active condition. My personal contributions to the subject are included in the statement that I was the first to employ mercury in this way, and that I have obtained clinical proof that carcinomatous structure loses its malignant character when fully impregnated by mercuric salts in this manner.

My first observations were made on mercury as a coating of zinc electrodes, the latter being amalgamated, as it is called, with mercury. This was an effective method, but has the disadvantage of a simultaneous dissemination of zinc oxychlorid along with the mercury. The result is a distinctly cauterant effect, which, though of value at times, is by no means necessary in the application of the method. The use of a base metal from which to disseminate the mercury has also the disadvantage of lessening the amount of mercury that is disseminated, as much of the electrolytic and cataphoric action is consumed upon the zinc. Notwithstanding what I now know to be the disadvantages of this method with zinc, the principal drawback being the production of sloughs, all the cases reported in previous papers were treated in this way, with a success that has been most encouraging.

About two months ago I determined to ascertain whether amalgamated electrodes would be better; or, in other words, whether the mercury that readily clings to gold could be as easily sent into tumors from its surface as from zinc. The result of the first experiment was conclusive, as a well-coated surface was denuded in a few minutes, the darkened alloy alone remaining as a coating. The theoretic conclusion that all the energy would be expended on the baser metal was thus

* Read before the Philadelphia County Medical Society, November 10, 1897.

proved to be a fact. The mercury disappeared so quickly from the gold electrode, indeed, that it was impossible to employ the same currents as formerly without turning the application into a mere cauterization with the freed oxygen and chlorin. I therefore devised instruments by which a continuous supply of mercury could be secured about the active pole, and find that there is little or no cauterization produced so long as this supply is kept up.

I herewith submit these instruments, and will demonstrate their action on a piece of meat. I will also prove that the mercuric salts penetrate the meat to a considerable distance, not only by the ocular evidence of its disappearance from the electrode surface and the darkening of the meat near the electrode, but by picking it up again at a considerable distance from the electrode on the negative pole of another current, which reduces the salts again to a metallic state.

In the employment of the method the electrode is inserted by puncture into the middle of the tumor and mercury freely injected through the former in such quantity as to surround the instrument with a cushion of this metal. With large pads connected with the negative pole placed on a distant and properly selected portion of the skin (so arranged as to produce the least effect on the heart and the respiration) a current varying from 300 to 1000 milliamperes is slowly turned on, under general anesthesia, and kept steadily flowing from fifteen minutes to half an hour.

In some cases the sarcoma or carcinoma shrinks at once, and is decidedly smaller and softer the next day. The procedure is repeated a week or more subsequently if it appears that all of the malignant cells have not been killed.

In the cases in which zinc instruments were used with strong currents the sloughs produced were unpleasant to a moderate extent, but since the gold instruments have been used no sloughs have appeared, the openings made by the electrodes being merely seared enough to remain patent. A dark, watery liquid drains from these openings that is absolutely free from odor, the wounds remaining aseptic under simple dressings, probably because of the immense quantity of mercuric salts disseminated through the tumor. There has been no evidence of a constitutional absorption of the mercury save that one patient noticed a tenderness in her teeth for a short time.

I exhibit to-night a patient who has had four applications for a sarcoma of the superior maxilla, all within two weeks. The tumor presented a surface-extent of about two inches by one inch, had destroyed the cancellous structure of the bone and extended deeply upwards into the upper jaw. There is now scarcely any of it left. I have also under treatment a case of carcinoma of the lip, one of the rectum, another of the breast, and two of the uterus; also sarcoma of the tongue and another of the thigh; but while the progress of some of these cases is most remarkable, it is yet too soon to report them for publication.

Piety and Prosperity.

Money is a convenient measure for almost every sort of endeavor, and to want more money wherewith to discharge our obligations and to help the needy and promote good works, as well as to increase our personal comfort, comes very near being a pious desire. Thrift and honesty come near; in the eyes of contemporary thinkers, to godliness. We have certainly made a great gain in thrift, and there is no reason to think that, as a people, we have retrograded in honesty. We of this generation, when we get into a scrape, are not so much disposed to insist that it was God's will as to reason together and try to find out what stupid thing we have done, or what wise thing we have neglected, that has resulted so disastrously. This we do, not necessarily because we are less religious than our forbears, but perhaps because we are somewhat more reasonable than they. It does not seem certain that this increased sense of our own responsibility is a development that is to be regretted.

However, if any of our friends who are solicitous for our welfare have been disappointed in some of the effects, or lack of effect, of adversity upon us, let us hope that they will be disappointed again, and more agreeably, in the spiritual results of any prosperity that may be vouchsafed to us.—*Scribner's*, Oct., '97.

CURRENT LITERATURE CONDENSED.

Treatment of Secondary Anemias.[1]

These anemias accompany or follow other abnormal conditions, and play an important part in their course. If not relieved they prolong the original attack, and when convalescence is finally established, leave the patient a shining mark for those infectious diseases which claim for their victims those whose resistive power is below the normal standard.

In most anemias the blood is diminished in volume, the corpuscles in number, and the hemoglobin sometimes falls to less than half the normal percentage. As a result the oxygen-carrying power of the blood is impaired, tissue metamorphosis retarded, and nutrition of the whole body suffers in proportion to the degree of the anemia. There is loss of appetite and constipation, and the work of living is but lazily done.

Treatment.—First: Regulate the bowels; for this podophyllum in small daily doses is effective. Second: Cause patient to drink freely of good water, boiled preferred, taking a glassful hot three-quarters of an hour before each meal. This fills up the circulation and facilitates excretion of waste products. Third: Give appropriate treatment for the original disease. Fourth: We need a remedy or combination of them that will increase the oxygen-carrying power of the blood, increase the appetite, and stimulate the stomach and intestines to renewed activity.

Many so-called blood makers attempt to do too much for us by supplying predigested and artificial food. It is better to give nature a chance by coaxing her to resume her work and then furnishing a nutritious and easily digestible diet.

A preparation meeting the fourth requirement, which has done me excellent service in many cases, is made by the formula of Dr. John P. Gray, a combination of sherry wine, phosphoric acid, gentian, taraxacum, glycerin and aromatics.

The following cases from my note-book will best illustrate my points:

Case I. Mary P——, aged 24, had several attacks of malaria during the fall of 1896, intermittent and remittent types; suffered two severe attacks of bronchitis during February and March, and had malaria again in May.

Examination shows profound anemia, rapid and very small pulse, temperature varying from 99.6° to 103°, as shown by later observations. Diagnosis, remittent malarial fever and anemia.

Treatment began with calomel, followed by quinin in doses of 5 grains every hour for four hours each morning, and small doses of podophyllum at night, plenty of boiled water, and a liquid diet rich in nitrogenous elements. Fever continued one week, but being convinced that anemia was partially responsible for it, on third day ordered Gray's glycerin tonic compound in half-ounce doses every four hours before taking food. This was continued four days with quinin as above, when temperature was normal. Now put on full diet, tonic continued before meals and quinin gr. ii. after meals. Treatment continued ten days, when patient reported a gain of four pounds, great increase in strength and growing appetite; pulse strong, appearance much improved. Tonic continued ten days longer, when a fine color and strong pulse evinced perfect health.

Case II. Margaret G——, aged 36, widow, took cold in March, had a constant cough, lost appetite and flesh, constipation and had sweats and fever. Has taken several preparations of cod liver oil, iron, hypophosphites and various cough mixtures without material relief.

Examination.—Roughened bronchial respiratory murmur, small moist râles over left apex, some dryness and fine whistling râles over right; no dulness elicited; anemic murmur at base of heart; pulse soft, 100; expectoration scant, glairy.

[1] J. A. Stoutenburgh, M.D., *Journal of Practical Medicine.*

Treatment.—For bowels, same as Case I, boiled water to be drunk freely, and a mixture containing codein one-sixth grain, and beechwood creosote m. i. in 3i of strong syrup of ginger, to be taken every four hours to relieve cough. Gray's compound was begun at once, taken after meals on account of irritable stomach.

Ten days later the cough is slight, no expectoration or sweats, sleeps and eats well; auscultation respiratory sounds much improved, a few moist râles over left apex. Codein mixture given twice a day. Tonic continued.

At the end of three weeks symptoms have disappeared; examination negative; pulse strong, condition excellent, although she is supporting herself and children by hard work.

Case III. Annie V——, aged 23, married, aborted at the third month, two weeks ago. Had profuse hemorrhage then, and it has continued in varying quantity to date; is thin and pale, has fever, sweats, severe backache and pelvic pain.

Examination showed enlarged tender uterus, with sanguino-purulent discharge; pulse 120, small and soft, mucous membranes very pale. Diagnosis, sepsis and anemia, following abortion and hemorrhage.

Treatment.—Thorough curetting with gauze drainage, changed every second day after irrigation with normal salt solution. The glycerin tonic and quinin were given as in latter part of Case I. In one week the temperature was normal, no tenderness or pelvic pain, general condition much improved, tonic continued before meals and elixir lactopeptin after meals to aid digestion. On fifteenth day patient said she was almost as good as new; appetite splendid, digestion and assimilation perfect. Patient discharged cured in twenty days, having gained nine pounds.

Case IV. Mary M——, aged 42, widow, was operated on for fibroma uteri one year ago, ovariotomy and partial hysterectomy being done. Since then has suffered constantly with stubborn constipation, anorexia and indigestion. Of late has had constant headache; cannot retain food, bowels not moved for six days, has distension of abdomen coming on every afternoon, accompanied by intense pelvic pain.

Examination showed marked anemia, tympanitis, bowels loaded and a fibroid reaching half-way to the navel and nearly filling hollow of sacrum.

Treatment.—Enemata to clear out bowel; copious drinking of hot water; liquid diet; hot stoups for pain. Improvement is rapid. On the third day retained food. Gray's quinin tonic compound in tablespoonful doses, well diluted, was given before meals and quinin gr. 2 afterward; food gradually increased. On the fifth day bowels moved naturally, distension ceased and appetite improving. One week later was much better; good appetite, bowels moving daily; is now doing her own work. She drank hot water before meals and continued the tonic for two weeks longer, when she reported that she was in better health than for years, and had gained eight pounds since beginning treatment.

These are some of the cases in which I have used this restorative formula with the best satisfaction. I am well satisfied that we have in this tonic a most valuable medium, one sure to grow in favor as its merits become better known.

The Therapeutic Possibilities of Music.[2]

It is the well grounded opinion of every student and investigator of modern life, that the purely nervous diseases and disorders are greatly on the increase. The rush and intensity of the mad strife for wealth and social position, the noise and bustle of city life, the continual excitement of the mad whirl of society—the carking care, worry, and fretfulness which fastens upon those who make more or less of a failure in their ambitions, all these evils tend to bring too much tension to bear on the delicate and intricate nervous system. The emotions constantly overwrought, the nerves constantly on a strain, the whole nervous system kept at high tension, without rest or healthful recreation, all this wrong living can but invite disaster, and a nervous breakdown is the result. The shores of modern times are becoming strewn with such nervous wrecks. At the present day at least one-half of all the diseases are believed to take

[2] *Journal of Medicine and Science*, Nov., 1897.

their origin from some disorder of the nervous system. Ills of the mind oft precede ills of the body. The two great unhealthful conditions of life, of which one or the other exist as causes underlying most of the nervous diseases, are generally speaking, unaroused emotion, and undisciplined emotional impulses. Ennui and boredom make more invalids than fever and inflammations. Want of interest and lack of an honorable purpose in life—stagnation of the emotions—lies at the root of much ill-health; and the fatigue, which is the sequel of overwrought emotion, lays the foundation of many a serious sickness. Ill-regulated emotions cause the debasement of human nature and of the arts, and are the direct cause of the ruin of many lives. What mars happiness? What destroys manliness? What sullies womanhood? What checks enterprise? What spoils success? What, indeed, but ill-regulated and ill-disciplined emotions? A single uncontrolled and passionate outburst counteracts many generous impulses, and blots out the remembrance of weeks of kindness. If there is one thing more important than to know one's self, it is to govern one's self. If there is one thing more important to a successful life than to crush impulses, it is to properly utilize them. The life of the ascetic stoic is but half a life, of which the other half is typified by the pleasure loving voluptuary. There is a happy middle ground, and in that medium lies health and happiness. The abusing, the misusing, or neglect of the emotional life led to all the wrangling and false living of the Stoics, the Cynics and the Epicureans.

Music, although the youngest and most artificial of all the arts, is that one which appeals most forcibly to the emotions. Music is not alone a tickler of the tympanum, but it can be made a regulator of the mind. In the ancient Greek drama, music and action always went hand in hand. The Greeks understood, at least, how sound regulates motion, and that motion is only the physical expression of emotions. With the Greeks, however, music was but a mere rhythmic regulator of dancing, feasting and oratory. Who can doubt that music, with its wonderful modern development, might be put to greater and better uses than this? Who can question that music, when it shall have accomplished its full mission for the millions, will be employed as the great excitor and the great disciplinarian of the emotions—capable to arouse the sluggish and to calm and soothe the overwrought?

Even the hard worked horse would confess the great debt which he owes to his bells, and the exhausted soldier on the march fully realizes what an inspiration and invigorator the music of the band is to his weary, dragging footsteps. The Highland regiments perform miracles of valor and of endurance under the wild fierce screeching and snarling of their Scottish bagpipes. The factory girls and the delving miners make labor light by singing at their work. Under the stimulus of music the invalid forgets his pains and weariness, his pale cheeks flush, his dull eyes sparkle, he becomes a changed man, and unwonted vigor suddenly, as if by magic, animates his enfeebled frame.

What is the meaning of these facts, which are presented to our notice every day? What but this, that inspiring music is capable of attacking the nervous system directly, rousing and reanimating it, and that soothing music acts like a balm and solace to overstrung nerves;—in short, that music, wisely used, can be made a powerful therapeutic measure and one especially suited to this excited age.

It is needless to say that in order for such a therapeutic measure as music to accomplish the good of which it is capable, it must be used with rare discrimination and taste. Music has two effects upon the emotions—to arouse, and to soothe. It would be worse than foolish to attempt to soothe an exhausted and worn out nervous system with a dose of the "Marseillaise Hymn," or of the "Awakening of the Lion" administered by a loud and lusty brass band. It would be useless to attempt to arouse the flagging energies of the tramping soldier by such musical selections as the prayer from Weber's "Der Freischutz," or the nocturne from Mendelssohn's "Midsummer Night's Dream." Good judgment, a large amount of common sense, and above all sympathy, affectional and musical sympathy, must be the stock in trade of the musician who would venture to select music appropriate to the alleviation of disease.

Not alone must the music be appropri-

ate to the case, but the therapeutist must be a real musician and not a mere singer or performer. The only idea most so-called musicians seem to have of music, is, that it consists merely in playing or singing a certain number of notes in a certain fixed period of time. It would be a distinct advance in musical art, if three-fourths of the so-called musicians who bang away at the piano, and scrape and saw on the violin, and sweat and puff at wind instruments would each and all tackle something within their scope, and put their surplus energy into grinding away on hand organs, for then they would at least be able to play in time and tune, and that is about all that can be expected of the average performer. The true musician is a very rare bird. It would be well within the bounds to say, that one-half of the singers never sing anything during their whole lives, and furthermore never will; and that most performers on musical instruments turn them into instruments of torture, to fret and exasperate all about them.

To quite a large extent, there is in the performance of every piece of music just what the performer is able to put into it. Schubert's Serenade is a piece of music which is within the power of every performer to play or sing, and yet the most talented and most skillful artists have studied and played it all their lives, and then acknowledged themselves disappointed in the result. How often do we hear a certain piece played by a certain performer and say at the close that it doesn't amount to much, but when we hear the same selection played by the cultured skilled musician, it becomes a revelation to us, and we almost fail to recognize it as the same music. Now what is the difference? Merely this, the last perfomer has put a part of himself into the music —that subtle thing which we call musical taste, feeling, expression, soul—and which is the very essence of music.

Even if the performer is a true musician he will fail as a "musical healer" if he does not employ tact in applying his remedy. Sympathy, quick judgment, watchfulness for effect, and the faculty of giving yourself when you sing or play, are prime essentials to success. Further, before you can make much progress you must have established between yourself and the sufferer that kindly rapport, which predisposes him to listen. The hand that soothes with music must be that of a true friend, really striving to the utmost, to do the sufferer good.

Modern music, in the right hands, could be made the great organ of emotional culture and of emotional discipline. Hearing music in the right way puts the emotions through such stages of discipline that the very force of emotion, which, allowed to run wild, brings ruin into life, grows, through the right hearing of skillfully selected music, docile and controllable, training us in the exercise of our emotions, as the gymnast is trained in the use of his muscles and limbs.

Finally, even if too many difficulties stand in the way of the application of music as a therapeutic measure for the relief and cure of disease, yet music should be generally cultivated, and the masses should be offered good music at low price, because music arouses and stimulates the emotions, and soothes and disciplines the unrestrained nature. Music makes us forget our cares and sorrows, lightens grudging, grinding toil, and makes the sad heart joyous.

A Case of Hemophilia with Joint Lesions.[3]

Alfred P., aged 30, single, a relief-stamper by trade, was admitted to the Bristol Royal Infirmary March 16, 1897, complaining of passing blood in his urine.

Two brothers died aged fifteen and seventeen months respectively from hemorrhage—in one case from hemorrhage from the mouth, and in the other from the opening by incision of a small abscess of the scalp. Two other brothers and three sisters have grown up without manifesting the hemorrhagic diathesis. A maternal uncle is thought to have died of bleeding, but this is not absolutely certain.

At seventeen months of age patient was admitted to hospital with swelling of the left knee. The swelling burst and the wound was kept open for a month. Within two months of his discharge he was readmitted on account of the diseased left knee. At five years of age he was an inmate of a hospital with his left knee bad as before. At seven years of age he was in hospital on account of the condition of

[3] J. E. SHAW, M.B Ed., in *Bristol Med. Chir. Journal.*

the same joint. At eleven years of age was struck with a stone on the inner side of the right knee; the joint became very much swollen. There was hemarthrosis of right knee and elbow, subsequently relieved by the aspiration; slight enlargement of the left knee also. Shortly after this he suffered from hematemesis for two months. At thirteen years of age he suffered severely from epistaxis. At seventeen years of age he was again in the hospital suffering from uncontrollable hemorrhage from a wound of the left thumb. He remained an in-patient for three weeks, and in two months more he was re-admitted for hemorrhage from the gums. Again at the ages of eighteen and twenty years he was in for bleeding from the gums; at the latter age he had an attack of small-pox, which was not hemorrhagic at all. At twenty-one years of age he is said to have had an attack of rheumatic fever. When twenty-eight, patient had a tooth extracted, followed by hemorrhage for a week. Hemorrhage from the gums is preceded for one or more days by twitching of the eyelids. Since early childhood he has been subject to temporary pains of an acute nature, affecting the larger joints of the limbs, accompanied by swelling: this swelling is always preceded by a "jumping" sensation and feeling of heat.

Condition on Admission.—Thin and rather cadaverous in appearance, complexion sallow, face marked with scars of small-pox. Temperature subnormal. Circulatory and respiratory systems: nothing specially abnormal. Lips pale, but not excessively so, gums spongy and liable to bleed, teeth very carious, breath fetid; spleen, thyroid and lymphatic glands all normal. Blood contained 55 per cent. of hemoglobin, corpuscles 4,000,000 per c.m., leucocytes slightly in excess of the normal; knee-jerk scarcely present; urine, of deep brownish-red color, was found to contain much hemoglobin and albumin; microscopically the deposit was found to be composed of blood corpuscles and urates, there were no casts of any kind, nor epithelium; both elbows and both knees larger than normal; the styloid process of each ulna enlarged, as also to some degree the lower ends of each tibia. The upper radio-ulnar joint of each arm is larger than normal, from enlargement of the head of the radius, which in rotation of the forearm seems to move eccentrically. There is no free fluid in these joints, the enlargement being bony. The elbow-joints can be flexed to the normal degree, but extension is impossible beyond an angle of about 130°. The knees are always flexed, the left the more so; the left knee can be moved through an angle of about 35° only, the right 75°. Movements in all these joints gives rise to a coarse grating or crunching sound, and is sometimes painful. At the edges of the articular surfaces of the bony structures forming the knee-joints marked "lipping" can be felt on palpation.

Following admission, patient passed upon one or two isolated occasions urine free from blood, which was also non-albuminous, otherwise the hematuria persisted in variable degree of severity. Upon several occasions he had attacks of severe "colic" associated with the left kidney, requiring even hypodermatic administration of morphia for the relief of the pain; these attacks were followed by the passing of blood-clots in the urine. Many examinations of the blood were made during the patient's stay; the hemoglobin fell to 28 per cent., and the corpuscles to 3,500,000. In many films examined, both stained and unstained, no special nor permanent abnormality was observed: the leucocytes seemed sometimes in excess of normal, and sometimes not so, and towards the end of his stay the multinuclear leucocytes were partly replaced by lymphocytes. No retinal hemorrhages occurred, and the gums only bled occasionally. The urine became finally free from blood nearly five weeks after admission. In addition to the permanently enlarged condition of certain of the joints of his extremities, he suffered from frequent attacks of acute effusion around and perhaps slightly into these same joints; these attacks were preceded by definite prodromata: several hours before the joint-lesion began, there was always a feeling of "pins and needles" in the fingers or toes of the same limb, and a feeling of heat in the joint. The next morning there would be considerable swelling superficial to the ligaments of the joint and beneath the true skin, and one or more spots about the area of a shilling or less would be extremely tender on pressure, at the same time the joint would be

extremely painful on being flexed or extended. It was doubtful if any effusion took place into the synovial sac itself on these occasions; if there were any such, it was extremely slight. These attacks were not induced by use, exertion, or trauma, but occurred without obvious exciting cause. The patient could always prophesy infallibly when any joint was going to be thus affected, from the occurrence of the sensory phenomena about twelve hours before the swelling. The condition usually passed off in two days. Some ecchymosis followed each puncture by the hypodermatic syringe; but in pricking the finger for blood examination some difficulty was encountered in obtaining blood, but none in checking hemorrhage from these punctures.

He was given calcium chlorid for the first three weeks in doses of eighty grains per diem; to this was added on April 1 three tabloids of thymus gland a day; April 7 the calcium chlorid was replaced by sulphuric acid and quinin, and this again April 15 by oleum terebinthinæ in doses of half a drachm a day. After the cessation of the hematuria he was ordered iron and quinin only. Operative procedure was not seriously considered, as the hemorrhage never put his life in actual danger, and only an urgent necessity would have justified cutting down upon the kidney.

The patient has lived beyond the age to which hemophiliacs usually survive, partly, no doubt, from the skilful treatment he has so often received in hospitals since infancy. Should his life be prolonged, he will probably lose his hemorrhagic tendency. The evolution of the present condition of his affected joints has been watched from infancy also. When the right knee and elbow were aspirated, and free blood withdrawn from each joint, the case was recognized as one of hemophilia. Now he appears to get very little or no effusion into the joints, but instead the curious peri-articular lesions before described, preceded by sensory phenomena, while hemorrhage from the gums is preceded by motor phenomena also. The affected joints are found by examination and shown by skiagraphic delineation to be in a condition similar to that of rheumatoid arthritis. The articular ends of the bones are much enlarged, the cartilages extensively absorbed, and very distinct "lipping" exists at the edges of the articular surfaces. Even in recent literature the joints in this disease are imperfectly described, and are said to resemble more or less closely tubercular joints. Positive error upon this ground is sometimes made. Summers reports a case in which an enlarged ankylosed knee, occurring in a boy aged ten years, was diagnosed as "quiescent tubercular arthritis." The joint was resected, and the patient died in twenty-four hours from uncontrollable hemorrhage, the operator discovering too late that he was treating a hemophiliac. Bowlby, in a paper entitled "Some Cases of Joint-Disease in Bleeders," gives a true description of the nature of the lesion. Skiagrams were taken of the knees also in this case; but owing to the inability of the patient to extend his knees, the results were not very clear, but great enlargement of the condyles and "lipping" were apparent.

It is to be noticed that, unlike rheumatoid arthritis, the fingers and toes completely escape implication.

Medicinal treatment probably had little effect. Calcium chlorid failed to exert any styptic action, and nuclein administered in the form of thymus gland did not apparently act as a stimulant to hemopoiesis, or even leucocytosis. Treatment can hardly be otherwise than unsatisfactory where the pathology is unknown.

The nerve symptoms preceding the acute attacks in the joints would suggest that these lesions are a form of spinal arthropathy.

The hereditary element in this case appears to be defective: but persons in this class of life seldom know much of the medical history of their progenitors and this case may possibly be as truly hereditary as others from well-known "bleeder" families.

Dr. E. C. Buell (*Pacific Coast Journal*) suggests in relation to difficult catheterization, unless arising from tight organic stricture: "Moderately or completely relax the anal sphincters." You will then be surprised to find how easily the properly selected catheter slips into the bladder.

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PHILADELPHIA, SATURDAY, NOVEMBER 20, 1897.

EDITORIAL.

PERIPATETIC BELL RINGERS.

We recall a single day in which the door bell rang some sixty times, without announcing a visitor who was worth a dollar, so far as earnings from practice were concerned. This is an exceptional instance, but the proportion of unprofitable to profitable callers at a physician's office is usually considerable. There are persons who come to summon the doctor; patients calling to ask some question forgotten at the formal consultation, or to get medicine, or a promised prescription; the always welcome bill payers and the ever punctual bill collectors; beggars who always regard the physician as "easy," but, more than any other kind of unprofitable callers, men and women who seek personal interviews for the sake of securing sales of goods, either immediately or indirectly.

Given a fastidiously dressed, haughty, middle-aged or elderly man, who is a stranger to the physician, and the chances are nine out of ten that he is either an insurance agent or a seller of an expensive book. He has leisure, he has effrontery, he is callous and not averse to wounding another's feelings. He consumes time, and even if the doctor comes off victorious, there still rankles in his memory insults directed at his humble library, at his lack of literary taste, at his want of funds, at his business acumen.

Quite the contrary is the agent of the wholesale druggist, or of the instrument maker. This man is young, polite in the true sense of the term, considerate of the doctor's time, generous with samples, usually not importunate—and yet so numerous that, in the course of a year, he has consumed days of valuable time, and has broken many a morning's nap which might otherwise have been undisturbed.

Perhaps the greatest nuisance is the female agent who resorts to embryonic blackmail to effect a sale or to extort a promise of future prescribing of some

commodity. Somehow, it happens that the really useful things are generally represented by men, whereas women are chosen to laud the virtues of combination syringes, portable Turkish baths, hygienic brushes, patent operating chairs, stoves and other ingenious devices to take the place of articles that are useful only when constructed on a liberal scale.

The man who would save himself from these harpies, must count the value of his time beforehand, and must deal as callously and as selfishly with the agent as the latter purposes to do with him. A good servant who can be taught to estimate the caliber and probable errand of a caller, and who can remember the faces of patients and of bores, is a blessing. One is justified in being suspicious of the person who is reluctant to give his or her name at the door, yet many respectable persons are guilty of this minor sin against the comfort of society, and it is not possible to insist too rigidly on this request. It is possible to form a habit of dealing quickly, yet courteously, with agents who pass the portal. Representatives of responsible houses in whose wares the physician is apt to be interested, seldom resent the request to leave samples and literature for study at leisure. Insurance and book agents must be met with a prompt and firm refusal of consideration or much valuable time will inevitably be lost. Of course this does not apply to the agents for regular medical publications who rarely abuse a privilege and usually deserve the careful attention of the physician.

We believe that drug manufacturers overestimate the value of a personal interview. For the most part, physicians use a remedy either because they have studied its action and believe it to be useful or because it is convenient. It is absurd to suppose that much good can be accomplished from the personal solicitation of a man who is neither an acquaintance of the physician nor, usually, able to give an impartial or scientific verdict as to the availability of a preparation. We have often had the experience of dimly recalling some pharmaceutic preparation that suggests itself as available but whose exact name, dose and place of manufacture or sale is forgotten. We turn to the advertising pages of a medical journal and do not find reference to it, then we prescribe some old favorite. We would urge upon the employers of traveling agents that they turn the money expended on railroad fare and hotel bills into other channels. Ship samples directly to physicians, or establish local distributing bureaus—as is already done to some extent by manufacturers of mineral waters. Replace the loose sheets of printed matter which eulogize some new drug, by catalogues and price lists that put the same information in convenient form for preservation and reference. Discontinue the little advertising periodicals that now evade Uncle Sam's postal regulations and keep an advertisement in the standard medical journals of the country. It would take a detective force to search out the physicians of the country who do not subscribe to one or more medical journals, and if each manufacturer makes these his agents, he can be certain that the entire country will be canvassed for him, week by week or month by month, with a thoroughness and cheapness unattainable in any other way. If this practice were common, the individual physician would be spared a great waste of time and his opportunities for testing new drugs would be enlarged.

A recognition of the fact that many forms of mental disorder are really varieties of what might be termed mental or intellectual epilepsy suggests the importance of the strict regulation of regimen in this class of disorders also, a foul breath, thickly coated tongue, and other symptoms of stomach trouble being almost universally found in cases of melancholia, hysteria, etc.—*Modern Medicine.*

CORRESPONDENCE.

THE ETIOLOGY OF SICK HEADACHE.

The continuous reappearance of such articles as that on "Hemicrania or Sick Headache," in THE REPORTER of Oct. 30, is an astonishing and most discouraging thing. For many years competent and good physicians have been protesting and proving that sick headache is due simply to eye-strain and almcst invariably curable by proper refraction. I have never seen a case not thus cured, and my experience has been considerable, I should guess covering a thousand cases. The writer of the article in question either is not conversant with the literature of the subject or he is guilty of misrepresentation when he dismisses this aspect of it with the piteously misleading and flippant sentence, "Of course cases that can be traced to eye-strain should have suitable glasses ordered." If, *e. g.*, he had read Dr. Hewetson's little book on "The Localization of Headaches and Sick Headaches," he might have condensed his long article in one short, true sentence, *Sick Headaches are due to Eye-strain.*

Respectfully yours,

GEO. M. GOULD.

119 S. 17th St., Phila.

THE SALT HABIT.

The use of salt as a condiment is so general and so universally believed in as necessary that we rarely hear a word against its excessive use, but there are a multitude of persons who eat far too much salt—eat it on everything, on meat, fish, potatoes, melons, in butter, on tomatoes, turnips and squash, in bread and on a host of foods too numerous to mention. To so great an extent is it used that no food is relished which has not a salty taste, and this hides more or less the real taste, which is often very delicate. Now, the amount of salt required in the system is comparatively small, and if the diet has been rightly compounded very little is necessary.

Some go so far as to discard its use altogether, but whether this is wise or not we will not here consider. What are some of the evils of the excessive use of salt? They are to paralyze the nerves of taste, or to pervert them so they cannot enjoy anything which has not a salty flavor, and in addition there is a direct tax on both the skin and the kidneys in removing it from the blood. Whether the skin is harmed by this tax we do not know. Possibly it is not greatly injured, yet we know that few people possess a healthy skin; but is now pretty well settled that an excessive use of salt does overtax the kidneys in its removal, and that the great number of cases of derangement and disease of these organs is due to this use. It takes only a little time to learn to enjoy many kinds of food without salt, and we advise our readers and others to look into this matter and to try and diminish the use of this condiment so far as possible. We believe they will be better for it—*Journal of Hygiene.*

In 1522, in Rome, the center of the Christian world, thirty-two years after the discovery of America, an ox was sacrificed in the Coliseum to the heathen gods, in the hope that by propitiating them the plague that was then raging might be stayed.

The simplest test for diabetic urine is to place a little on a piece of bright tin, which is held over a spirit lamp until the urine has evaporated. If sugar be present the last portion of the urine will give the characteristic appearance and odor of burnt molasses.

ABSTRACTS.

PAIN.*

Semeiotics have such a considerable importance as the base of clinical medicine, that we think practical therapeutics and rational treatment cannot be undertaken without the aid of semeiology. Let us take pain. Without the symptom that is most commonly met with many of our patients would never come to see us, and they would neglect to take care of themselves. This, indeed, is the symptom that you will be asked to meet first in most cases, and its absence makes most attempts at prognosis serious, that is to say, that the latent affections are the grave ones, as they are allowed to develop without treatment.

It is in this way that a large number of maladies were, for a long time, not recognized; for instance, endocarditis was unknown to the older physicians, and it was not until Bouilland showed its gravity that we sought for the malady. In the same way chronic nephritis has no pain, and aortitis, of which you see frequently a dozen patients in our wards, has to be looked for, as it is not painful.

Certain other diseases are sometimes not painful, such as typhus ambulatorius, where the symptoms are so obscure that the patient goes about his business, and yet death comes to them often by intestinal perforation.

In pleurisy even, where the pain is so often intense, yet it may be absent, and these cases are very serious. Lasègue tells us of having been called once to see a physician in his neighborhood, who had been taken ill, and on his arrival he found him dining. He said that he only felt a little difficulty in respiration, but no pain. Lasègue, however, insisted upon making an examination, and the patient died before him, while sitting on the side of the bed; perhaps a violent stitch in the side would have saved him, as it would have led to early treatment.

Pain is sometimes absent in those affections that we look upon as most painful; for instance, angina pectoris, and these are dangerous cases. We remember once at the Neckar Hospital, seeing a workman at the consultation, who came for a slight pain in the left arm, and would not enter the wards for treatment, as he did not consider it worth while. We, however, insisted on his going into the hospital, and he had hardly arrived in the rooms before he fell dead.

There are some diseases that consist only in pain, and many that have it as the predominant symptom, so that it is well to study it carefully. The *intensity* of pain is what naturally strikes the patient, but it is by no means proportioned to the gravity of the malady, and it depends a good deal on the character of the patient. Without speaking of the ancient race of Spartans, you know that some people are very little impressed by pain. This is partly the result of education. A physician at Chantilly, where they have so many race horses and the English jockeys, tells us that they are so accustomed to falls and fractures, that they don't seem to mind pain, so much so that even their wives don't complain much during confinement. The intensity of the pain, then, is not very important, except for the doctor, when he finds it excessive. When in pleurisy a violent stitch in the side should warn us of gangrene of the part, and a peritonic acute pain in typhoid would show the probability of intestinal perforation. Sometimes, the intensity of the pain is a danger for the patient. It brings a fatal result in hepatic colic and in some of the angina pectoris cases.

We now come to the seat of pain. This is more important than the intensity, and here we must distinguish between provoked and spontaneous pain. The causes of the last variety are too numerous to mention; most of the pyrexias are accompanied by some pain. You

* Prof. Potain, Paris, France, *Medical Fortnightly.*

know the throat pain in scarlatina, and the sternal pain in measles, the spinal rachalgia in small pox, the melalgia in grip or influenza, the headache in typhoid, the neuralgic pain in malaria, the osteocopic and cephalgia of syphilis, and the cephalgia in chlorosis. Pain is frequent in poisoning by lead, lead colic and the pain of chronic saturnism, the pain in the limbs in mercurial and arsenical poisoning, oxid of carbon gives a pain in the limbs, and it may lead to paresis. Finally, in anginal cases the cardialgia is sometimes provoked by the use of tobacco, tea, coffee, etc.

Very often it is a local malady that causes pain. In the limbs this may have its seat in the skin (dermalgia), in the nerves (neuralgia), in the muscles (myalgia, in the bones themselves, but here it is often a surgical malady. The splanchnic cavities interest us most; we must learn to distinguish between parietal and visceral pain; in the cranium, for instance, we may have a dermalgia, a myalgia or an epicrania; a pain, in fact, may come from the meningeal membranes, or the brain itself.

In many cases the seat of the pain has no direct relation to the disease, so far as the viscera is concerned. The "stitch in the side" is seen about the same place always, and it has no direct relation to the exact seat of the inflammation of the pleura; we must, however, except the pain which accompanies pleuritis in tubercular patients, which is directly over the seat of the inflammation.

Sub-sternal and dorsal pain will indicate a lesion of the esophagus, but it will not show the exact spot of the lesion, and you will have to pass the catheter to find the right seat of the difficulty.

Gastric pain mostly has an exact seat, and the patients can show you the place they feel the pain, which will generally be the seat of the lesion.

The pain that has its point of departure in an irritation of the biliary ducts is a fixed one in the right hypochondrium. Colitis has a pain that crosses the upper umbilical region from one hypochondrium to the other. Nephritic colic is felt along the ureter, where it has its seat. Vesical pain is easy to recognize, as it has tenesmus with it.

There are a certain number of pains that are pathognomonic; such as the pain in angina pectoris; this is the well known pre-thoracic pain with its irradiation down the left arm, or both arms. There are, however, many exceptions to this rule. Epigastric pain may be owing to an affection of the colon, and enteralgia is often confounded with gastralgia; hepatic colic may have its seat in the epigastrium and be taken for gastralgia, or the pain here may relate to a trouble with the solar plexus.

Among the causes of this we may cite aneurism of the abdominal aorta. Stokes relates a case of an English magistrate who went all over the capital cities of Europe to get relief of an atrocious pain in the epigastrium, for which none of the great physicians could make a correct diagnosis, and he died after a short time with an abdominal aortic aneurism.

Then here we must remember the gastric attacks of tabes (locomotor ataxy), and in some of the epileptics a gastric pain or aura is found; finally that region gives the severe pain seen in uremia. So that the seat of pain is really very rarely pathognomonic.

Besides these spontaneous pains we have the pain from irradiation. These pains deserve all your most careful attention; some of them are signs of extension of the pain to the whole of the nerve tracts of the region, as you see in sciatica, the pain in the temporal nerve and the occipital in prosopalgia.

Other pains are the synalgic or reflex pains; these occupy a very large place in semeiology. You must know the dorsal pain in stomach affections, in scapulagia, in hepatic colic, the pain of the posterior portion of the deltoid in liver diseases; the irradiation into the scrotum and thighs in nephritic colic, the brachial and cephalic ones in angina pectoris, the costo, xiphoidien pain in diaphragmatic pleurisy and in pericarditis.

Rectal pain often goes down to the thighs; this you will see in old people who are constipated, and if they have pain in both thighs you should pass your finger into the rectum, where you will often find the cause of the pain. In affections of the colon the pain will be often in the pericardial region. Chronic colitis

is often kept up by the arrest of fecal matters about the level of the bend made by the transverse colon and the descending one, and the pericardial pain it gives has been the cause of numerous errors of diagnosis; in 100 patients who come complaining of this pain, 70 of them will have an affection of the colon.

You will have seen in our wards the young man who came in lately, and said that he was taken with sharp pain in the pericardium with a slight fever, and the doctor took it for heart disease of a serious order, and gave him medicine and applied mustard plaster; we found that he had grip, with an intestinal location and reflex pain.

Ovaritis sometimes gives intercostal pain, so much so, that in all young women who have a constant intercostal pain you will do well to look up the maladies of the ovary in the case.

Sometimes the primitive affection may be without pain, and then a reflex pain will occur, and the physician will have all he can do to trace up the initial lesion. It is in this way that a headache pain is often due to troubles far away from the brain. Many migrains are from former dyspeptic troubles; notice that the quick eating of ice cream or drinking of iced water will produce a tightening of the temples. The presence of a worm in the intestines gives a violent pain in the head sometimes, which ceases after the expulsion of a tenia. The passage of a biliary calculus may give as a single symptom a pain in the head.

We were consulted by a lady who had hepatic colic, and this was replaced by two special pains in the head; the pain began in the right temple and ran around the head to the left temple, and after each one of these attacks a calculus was found in the stools.

Another lady came to me with such a violent pain in the head that it resisted all treatment. She had leucorrhea, and we found an intense metritis; a local treatment cured the headache.

Other pains are due to some affection far off from their seat; such is the cubital pain, on the nerve, in Chinese diarrhea. Leudet has observed a pain in the thighs in old cases of pneumonia; constipation gives a pain in the heel; this was also spoken of by Lasègue in congestive cerebral affections. Many of the vesical calculi give a pain in the glans penis.

Provoked pain gives the physician better information; if we cause a pain about the level of the nerves where they leave the bone through orifices, we have a neuralgia. When the pain is along the tract of the nerve, and it is obtained by pressure or irritation, then it is a neuritis; the absence of pain on pressure in spontaneous pains indicates a reflex pain and we have then to determine its cause.

In certain cases you will get a pain on pressure in an opposite member, some of the scleroses of the spinal cord gives this sign.

Pressure is an excellent means of localizing pain; thoracic palpation is not much use to us, but abdominal palpation is very important, for it will reveal pain in the cecum in typhoid, in typhilitis and the more circumscribed pain in appendicitis, the pain in the iliac in dysentery, etc. You know the very good results we get also in palpation of the kidney, pressure is useful also in diagnosis of abdominal aortitis.

A great pain on slight palpation will indicate peritonitis, and a simple scratch will indicate a parietal affection, as can be seen in lead colic.

The ancient doctors took the nature of pain into great consideration. In Tragan's time, a writer speaks of thirteen varieties of pain, and the more modern Hahnemann made out seventy-five kinds of pain, but in reality the nature of the pain gives us very little information. The imagination of the patients gives reins to itself in the description of the kind of pain, and we are not impressed with the comparisons they make. There are a few exceptions, however; you will find that certain patients always use the same terms for the pain they feel, such as those of tabes (locomotor ataxy) and they will tell you always that the pain is a burning one in ulcer of the stomach, and that of cancer is duller.

Considerable importance is given to the agonizing quality of the pain in angina pectoris, but still most of the viscera pains are more or less agonizing, and the anguish may not be great in angina, and yet the case be very serious.

We have several times spoken of the case of a man who had only slight pain, and yet he died while we attempted to perform auscultation.

The type of pain is important, as it may be continuous, as in acute articular rheumatism, or paroxysmal, in chronic forms. The neuralgias are mostly intermittent and when they assume the form of *tierce* or *quarte* then we think of malaria or intermittent fever. Chronic rheumatism pains are often only at night, and in gout also, the pain starts in the middle of the night and it is better "when the cock crows," as the old writers say. The osteoscopic pain in syphilis is also a night pain, but mostly in the first part of the evening, and in the tertiary period, although sometimes in the secondary.

Provoked paroxysms are interesting as to diagnosis in gastritis pain, may be caused by the injection of food, or it will appear just after meals, in ulcerous gastritis, and come on later hyperhydrochlorid. In ulcer of the duodenum, the pain comes after the stomach digestion is nearly finished, in enteralgia the same, but there are some cases of it when the meal seems to ease the pain.

It is particularly in angina pectoris that the pain felt is important, you are aware that we have shown that there are several varieties of angina. This syndrome may be due to stenosis of the coronary arteries, to a neuritis of the cardiac plexus, to a neuralgia of that plexus, to a dilatation of the right cavities of the heart, a poisoning by tobacco and finally to an affection of the superior member. The syndrome is always the same in all these cases, but the conditions that cause it are different, as you see.

The angor due to stenosis of the coronaries which appears on making a movement or an effort, is owing to an ischemia of the myocardium at the moment when the heart contracts more violently than usual. It is exactly like what is seen in horses when they have intermittent claudication of the iliac arteries. Now, in angina, due to neuritis or neuralgia of the plexus, the pain comes on spontaneously without any apparent cause, and often at night. That due to dilatation of the right heart comes from the ingestion of aliments. The tobacco heart pain is owing to the habit of smoking too much, or even of breathing the air of a room that has tobacco smoke in it. The reflex pain similar to angina pain that is seen in an injured arm is produced when the patient tries to use his arm, and not when he uses the other one.

In some cases the pain of this nature is produced by movement, and this is not owing to stenosis of the arteries, but to a weak condition. You will see this here now and then, and think it is an angina; but notice that the pain does not come on as in real angina, just at the very moment that the patient moves his body or arm, but after the fatigue of doing so; this is a fact in all neuralgias of the cardiac plexus.

Pain, then, is of great importance for you to study as its semeiology will conduct the physician to the correct diagnosis and proper treatment; it also acts as a rein to patients, and prevents them doing imprudent acts that might be dangerous to them.

Union in Medicine.

If the profession is to be kept a profession, and if its members are to be protected and delivered from the manifold evils that threaten their peace and prosperity, it seems more and more essential that everything should be done by each member in his personal or official capacity to promote union within our ranks. If this can be procured and preserved we should be the strongest profession of the three, instead of which we often appear the weakest and the least coherent. The other professions are essentially more public in their relations, and have opportunities of asserting themselves which ours has not. But it is a fact that if we could but be true to one another and to the duties which we have to perform, we could make ourselves more indispensable than men of other callings, and put ourselves in a position to command the full respect of the public and reasonable terms for our services.—*Lancet.*

In tobacco poisoning (nicotin) give tacium, dilute acetic acid, strong coffee, and strychnin hypodermatically.

THE RELATION OF EYE SYMPTOMS TO URINARY EXCRETION—A CLINICAL STUDY.*

The relation of eye symptoms to disturbances of the kidney has been studied quite extensive of late years. Attention has, however, been focused upon the relation of Bright's disease and retinitis, and altogether too little has been given to other eye symptoms in their relation to anomalies of urinary excretion The following cases are reported therefore for the purpose of calling attention to this relation, and of showing in a fragmentary way the importance of a careful study of the urinary excretion in all cases presenting anomalous or obscure eye symptoms.

The first case is that of a woman 52 years of age who presented glaucomatous symptoms. She had been informed that her disturbances of vision were the early signs of glaucoma, and had been warned of the dangers attending that affection. Two relatives were nearly blind, and for two years prior to coming under observation she was in great dread lest she would lose her vision. The subjective symptoms were frequent attacks of pain in one or both eyes, the vision was indistinct for distance, and she could not read without great effort and an increase of pain. Lights were surrounded with a halo. She was an occasional sufferer from headaches, which did not seem closely related to the eye strain, and was of decidedly neurotic temperament. She was unmistakably hypermetropic, with astigmatism, which was fully corrected both for near and distant vision. No muscular insufficiencies were discovered. During the attacks of pain there was no increase of intra-ocular tension and no cupping of the disk nor arterial pulsation—in fact no objective symptoms that pointed toward glaucoma. She was informed that she was not suffering from glaucoma, and a careful search was made for other causes of the eye disturbances. Examination of the urine showed that there were crystals of calcium oxalate present.

In this case it seemed sufficient to know that the eyes were free from structural defect, but the improvement of the urinary excretion by both diet and medicine was followed by a marked and rapid improvement in the eye symptoms, so that at the end of a short time she was able to use her eyes with comfort.

Another case was that of a woman who was amblyopic in one eye; the other had 1.25 d. cy. ax. 120 for distance, and 1 d. sph., 1.25 d. cy. ax. 120 for near vision. She complained of headaches and dizziness, which were increased by close use of the eyes. By wearing glasses the headaches were diminished and vertigo was lessened. The urine was examined and was found to contain no albumin, sugar, or casts. The urates were scanty, with uric acid in small amount. The total quantity in twenty-four hours was 23 ounces of a specific gravity of 1015, and contained only 247 grains of urea. The small amount of urates directed attention to the general system, and she was referred to her family physician, who gave her potassium iodid, regulated the diet, and recommended outdoor exercise. Under this treatment her headaches and vertigo disappeared, and the use of the eyes became easy and comfortable.

At this time the case was regarded by the family physician as one of incipient nephritis; and this was confirmed, for after eighteen months a trace of albumin appeared in the urine. This was associated with a slight degree of retinitis, but there has been no return of the headaches or dizziness, nor has there been discomfort in using the eyes.

A third case was that of a male aged 23 in apparent good health, who complained of inability to use his eyes continuously without great discomfort. His refraction was .75 spherical and astigmatism. The extrinsic muscles were of good strength and well balanced. The glasses gave him some relief, but the eye symptoms did not disappear. Lotions and ointments were faithfully used. His complaints and other indefinite symptoms led to a careful examination of the urine, which revealed uric acid in great excess on three occasions. Appropriate diet was ordered, together with salicylate of soda, which was

* Edward W. Wright, M.D., in *Medicine.*

given in five-grain doses three times a day for two weeks, the treatment being then changed to lithia, which was continued for two months. This was followed by a disappearance of the irritation and hyperemia of the lids. He was enabled to leave off the use of glasses in the daytime, only employing them at night. There was a complete disappearance of all symptoms of eye strain.

A fourth case was that of a woman 45 years of age who complained of pain in the eyes after reading for a short time; sewing or reading in the evening was difficult and caused much distress. Refraction was .50 d. spherical in each eye for distance. She wore 1.50 d. spherical for near vision. The accommodation was weak, but the equilibrium of the extranervous system was greatly impaired by a prolonged period of nursing, and from anxiety and grief. The vitreous was a trifle hazy, but the fundus was normal. She had taken iron for a long time, but found herself no better. An examination of the urine showed an excess of phosphates. She was advised to eat more animal food and to take plenty of exercise in the open air. Phosphoric acid and hypophosphites were given, and she was advised to visit relatives in a northern city. This plan of treatment was faithfully adhered to, and upon her return she was able to read or write and use her eyes as much as she desired without the slightest pain or distress.

These few cases exemplify in a small degree the importance of the relation between the general system and the eyes, and emphasize the necessity of seeking diligently for all the causes which may influence the eyes in the performance of their function. In many cases all that is needed is to correct a refractive error when it is present, and this will be followed by a cessation of the eye symptoms. The purpose of this report, however, is to call attention to another class of cases in which there may be refractive error which does not give rise to symptoms until there is a disturbance of the general health or some abnormality in the excretions. In this latter class it is not sufficient to correct the refractive error alone, but in addition we must seek diligently for other causes which may keep up ocular irritation after eye strain has been removed as far as possible by proper correction.

RICE STARCH.

Something new to most of us, although it has long been known and appreciated in Europe, is rice starch, says a writer in the *National Laundry Journal.* The qualities which have placed rice starch above all others in the estimation of the people of European countries generally are strength, purity and tenacity. The first makes it economical, the second gives beautifully clear work, the third an elastic finish, all of these being very desirable qualifications.

Rice starch is the strongest and purest of all laundry starches, containing over eighty-five per cent. of pure starch. As rice starch makes a very stiff paste, less of it is required to make thin liquid starch suitable for shirts, collars, etc. It penetrates the fabric thoroughly and does not blister nor coat the surface with a film, as do most of the other starches. Thin, cooked starch is readily absorbed by linen or cotton materials, imparting a soft, durable finish, without the brittleness and noisy rattle caused by the use of other starch. What one man considers an ordinarily stiff finish on shirts, collars, etc., another man will declare to be stiffer than a board, and a soft finish to one seems as limber as a rag to another; therefore it is nearly impossible to give directions for preparing a starch that will result satisfactorily to all.

Seven ounces of rice starch with one gallon of water makes a nice thin liquid, suitable for shirts, collars and cuffs, as it gives a nice flexible finish which bends and gives to the body. Rice starch is also the acme of perfection for dark colored goods, as it soaks right through the material, leaving no streaks on the surface when ironed, giving the appearance of new goods, such as can be obtained by no other preparation.

SOCIETY REPORTS.

SECTION ON OPHTHALMOLOGY.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

Meeting, October 19, 1897. Dr. George C. Harlan in the chair.

DR. G. E. DE SCHWEINITZ read a paper on *Amblyopia in Horses*, probably due to the toxic influence of tobacco, as described by Dr. James W. Barrett, of Melbourne, Australia. Through the courtesy of Dr. Barrett he was enabled to exhibit to the Section two slides which Dr. Barrett had prepared from the optic nerves of a horse which had become blind, owing, it was supposed, to the consumption of some plant, probably the Australian tobacco plant. One of these sections, originally stained with carmine, had been removed by Dr. de Schweinitz from the slide and re-stained by the Weigert method. The section was composed of about one hundred nerve bundles, some of which showed distinct signs of disease, namely, a species of fibrosis which separated, pressed upon, and destroyed the individual nerve fibers. This was a marked phenomenon in several of the bundles and less apparent in others. The Weigert section confirmed, in large measure, the observations already made by Dr. Barrett, who also found atrophy of the nerve fibers, but who did not describe abnormal development of connective tissue. It appeared exactly to coincide with the observations of Dr. Tidswell, who described the condition as one of progressing fibrosis with some degeneration of the nerve fibers.

Dr. de Schweinitz also read a paper on *Blood-vessel Formation in the Vitreous.* He described the ophthalmoscopic appearances of the left eye of a man, aged 26, as follows: The optic disk was a vertical oval, of somewhat pallid color, and springing from it there was a greenish-white mass of the type usually seen in proliferating retinitis, which carried a veil of anastomosing blood-vessels and terminated in several clump-like, dark bodies, one extending forward into the vitreous 7 D. Similar patches of greenish-white connective tissue, supporting similar congeries of blood-vessels, were visible above the disk, above the macula, downward and inward along the course of the inferior nasal vessels, and directly below the disk. These masses varied in prominence in the vitreous from 3 to 7 D. The patch above the disk was in immediate connection with an area of retino-choroiditis, and some of the blood-vessels could be traced directly to this patch. No direct communication with the fundus could be seen in the other masses. The patient's vision was normal and, in general, the vitreous clear. The only probable etiologic factor which could be discovered was an uncertain history of syphilis, although a careful examination by his family physician had failed to reveal secondary symptoms involving skin or mucous membrane. The treatment had consisted of a thorough course of mercurials and iodid of potassium, which, however, had produced no visible effect upon the retinal lesions.

Dr. de Schweinitz described the various theories which had been advanced to account for the development of connective tissue in the vitreous, associated with the formation of blood-vessels, and thought that the one which ascribed them to the result of hemorrhages was the one that had most to commend it.

Discussion.—DR. G. C. HARLAN showed the picture of a case of extensive vascular growth in the vitreous, reported at the meeting of the American Ophthalmological Society in 1889. A beautiful vascular network forming a delicate membrane extended into the vitreous from the disk where the larger vessels arose. These vessels subdivided rapidly and ended in capillary loops best seen with + 4 D. The vitreous was clear within the meshes of the membrane, which nearly disappeared from view when the fundus was focused. There were repeated retinal and vitreous hemorrhages. Two years later most of the smaller vessels had disappeared, and many of those remaining were empty.

Dr. Harlan also referred to a case of repeated hemorrhage, from which Dr. Theobald, of Baltimore, had the opportunity of watching the growth of a somewhat similar vascular membrane.

DR. P. N. K. SCHWENK spoke of a case in which a similar vascular tumor had grown from the optic disk. Small hemorrhages were detected in its periphery.

DR. EDWARD JACKSON referred to a case previously shown before the Section, in which repeated hemorrhages through some months had each been followed by an outgrowth of vessels into the vitreous in the region of the hemorrhage.

DR. B. A. RANDALL had seen a case of similar fibrous development from the disk without vessels.

DR. S. D. RISLEY reported a *Case of Ocular Disturbances from Injuries to the Head.* He made a preliminary report in a case of blindness in the left eye, with marked swelling of the optic nerve, a recent hemorrhage at the macula, floating vitreous opacities, and an extensive detachment, probably of

both choroid and retina, throughout a large portion of the lower half of the eye-ground. There were, also, in the upper temporal quadrant of the fundus, radiating gray-white streaks, one of which resembled the late appearance after rupture of the choroid, and others appeared to be folds of detached retina. The changes had followed a blow received one year before with a base ball bat on the left side of the head, anterior to the ear. There was no sign to indicate the exact location of the impact. He was rendered unconscious by the injury, and remained under treatment for three weeks. He now has frequent convulsive attacks affecting the right side, which begin in the toes of the right foot, rapidly ascend the leg to the right arm, ending with twitching of the left side of the face and severe occipital pain. This case forms the last of a series of five cases that had come under Dr. Risley's notice, in which blindness in one eye had followed blows or injuries to the anterior portion of the skull. Case I was that of a young child who had fallen, striking the left infraorbital ridge. In three weeks atrophy of the left optic nerve had commenced, which became complete with total blindness in the left eye. There were no hemorrhages or other ocular changes. Case II was that of an elderly man who had commencing atrophy of the optic nerve with whitish splotches and gray infiltration in and around the macular region, following a severe blow on the outer angle of the left supra-orbital ridge. The atrophy became complete. There were no hemorrhages in the eye-ground and no detachment of the retina. Case III was that of a man who was struck by a falling timber on the anterior part of the top of the head, which felled him. A short time after he complained of failing vision in the right eye. There were fine granular changes with slight gray infiltration in the macular region and incipient atrophy of the optic nerve with some contraction of the visual field. Both the contraction of the field and the atrophy progressed for some weeks and then became stationary, resulting in a marked and permanent impairment of vision but not in total blindness. Case IV was that of a farmer who was struck in the left temporal fossa by a steel tooth of a horse-rake. The temporal plate of the orbit was probably fractured. Two months after the injury there was well advanced atrophy of the optic nerve with only qualitative perception of light and the remains of extensive absorbing hemorrhages throughout the eye-ground, large white patches here and there, and a partially absorbed hemorrhage at the macula.

The mode by which this class of injuries causes blindness furnishes an interesting subject of inquiry. The changes in the fundus suggest, in some cases, thrombosis, but this condition does not explain those in which the blindness ensued from simple atrophy of the optic nerve. The supposition of injury to the nerve caused by splinters of bone from fracture of the orbital plate, or by pressure in the foramen at the time of the blow, or by post-ocular hemorrhage, is plausible. It is also possible that a thrombosis, if present, may have been produced by direct injury to the nerve. In the case reported before the Section in the spring of the present year, where total blindness followed the discharge of a gun near the side of the head, from detachment of the lower half of the choroid and retina, as in the case reported to-night, blindness gradually ensued from optic-nerve atrophy as a sequel to, probably, retro-bulbar hemorrhage.

Discussion.—Dr. Jackson had seen a case of injury of the brow with extensive hemorrhage into the orbit, which had caused protrusion and complete immobility of the eyeball, with absolute blindness within 48 hours. During the first few days no intra-ocular lesion was detected, except a very marked gray opacity of the retina with swelling. As this subsided, choroidal disturbances were found throughout the fundus with extensive hemorrhages in the upper-inner portion. The choroidal changes went on to atrophy and pigment absorption, and the eye remained blind, but regained almost normal movements.

Dr. de Schweinitz reported the case of a girl who fell, striking her head, and was found partly unconscious. A day later she complained of blindness. The right retina was bluish-gray with no interruption of the retinal circulation. In a few days the retinal haze disappeared and was succeeded by choroidal changes and complete blindness with white optic disk. The lesion in all probability was a hemorrhage in the sheath of the optic nerve.

Dr. George Friebis reported the case of an old lady who lost the sight of one eye a few days after receiving a slight blow on the head. The fundus was studded with hemorrhage.

Dr. Edward Jackson read a paper on *Auto-Skiascopy.* This requires the usual apparatus for skiascopy and a looking-glass. In this glass is seen the reflected image to which, as to a patient, the surgeon applies the test. One eye is used to study the refraction of the other. Since the image is as far behind the looking-glass as the surgeon is in front of it, the distance from the surgeon's eye to the observed eye is double the distance from the looking-glass.

For the plane mirror the light is brought close to the observing eye, and far enough to one side to leave the observed eye in the shadow of the nose. For the concave mirror the source of light should be placed at least one meter behind the looking-glass, far enough to one side to allow it to shine on the mirror in front of the observing eye, but so as to leave the observed eye in shadow. The two eyes having to take the different roles of observing and observed, proves somewhat puzzling at first; but when more familiar with the test, the ob-

served eye is of positive assistance in keeping the light properly directed, since it sees in the looking-glass the reflection of the mirror held before the observing eye. In auto-skiascopy the refraction is not measured at the fovea, but at a point somewhat to the temporal side of the macula. The value of the method, both to gain familiarity with the shadow test and as a means of studying problems in physiologic optics, makes it well worth trying.

DR. SCHWENK exhibited and reported two *Cases of Rupture of the Pupillary Margin of the Iris.* The first, that of a boy, struck across the eye by a brick, showed four V-shaped nicks in the margin of the pupil, dilated to 9 mm. but contracted to 5 mm. under eserine. Vision was at first 2-200, and in three days rose to 15-20, after which it again declined owing to progressive opacity of the lens. The second case was that of a man struck in the eye with a corn-cob two years previously. The pupil remained one mm. larger than that of the other eye, with serration and cicatricial changes of its lower margin.

Pilocarpin in Chorio-Retinitis.—DR. HANSELL detailed two cases of non-syphilitic central retino-choroiditis, in which the disease had been checked and vision greatly improved by the injection under the skin of pilocarpin muriate, and alluded to two others that were still under treatment, in which the benefit from the administration of this drug was marked. In all the cases potassium iodid and mercury had been previously exhibited in large doses, without avail. In No. 1, vision had fallen to 20-200. The patient received daily, or on alternate days, according to its effect upon the heart's action, 1-12 to ⅛ grain. In four weeks vision was restored to 20-20 (?). In No. 2, vision was reduced to 20-50, and, by the same treatment continued for seven days, was brought to nearly the full acuity. In none of the cases could a history of syphilis or other constitutional disease be obtained. Dr. Hansell's experience with pilocarpin in the above and other cases warranted his asking for the remedy a trial in the treatment of chorio-retinal inflammations, particularly in the acute form, and of opacities of the vitreous frequently associated with choroidal disease.

DR. W. M. SWEET exhibited for Dr. Hansell a *Case Showing the Result of Puncture of the Sclera in Recent Detachment of the Retina.* The patient had, for some months, a small detachment of the superior portion of the retina, mainly of the superior artery and vein. Suddenly, three weeks ago, he lost all perception of light, excepting in a small spot in the foveal region. The retina was totally detached and the vitreous full of opacities. Two days after the blindness was noticed, an incision ½ inch long was made in the lower and outer section of the sclera and a probe inserted to separate the edges of the wound. A considerable amount of semi-fluid material was forced out of the opening by pressure upon the opposite part of the globe. The next day vision was greatly improved, and a week later, with the correction of a low hypermetropia, vision was 20-20 (?). The vitreous still showed some remains of hemorrhages. During the next few weeks vision varied between 20-20 and 20-40.

DR. WENDELL REBER exhibited for Dr. Hansell a *Case of Congenital Aniridia*, in a girl seven years of age. Vision was decidedly below normal on account of opacities in the lenses, also congenital in origin. The other parts of the eyes were healthy and showed no abnormalities. No other members of the family had congenital defects of any kind.

HOWARD F. HANSELL,
Clerk of Section.

PERISCOPE.

Poggi describes a treatment from which he has obtained excellent results in **burns of any degree.** It consists in the use of potassium nitrate in the form of baths, compresses steeped in a saturated solution of this salt, or lotions. Potassium nitrate acts in burns as a refrigerant, for, on dissolving in water, it determines a marked lowering of the temperature of the liquid, amounting to as much as 3.5 deg. C. (6.3 deg. Fahr.). If a burn on the hand or foot is plunged into a basin of water to which a few teaspoonfuls of potassium nitrate have been added, the pain experienced by the patient rapidly ceases. After a while, the water is heated up, and the pain reappears, but it quickly subsides on the addition of another supply of potassium nitrate. This bath, when continued for two or three hours, frequently dispels the pain, and, it is said, may even prevent the production of phlyctenæ. The application of compresses steeped in a saturated solution of potassium nitrate exerts the same refrigerant and antiphlogistic action, the pain being alleviated thereby, and cicatrization of the wound taking place without difficulty. Prof. Vergely, of Bordeaux, has obtained very favorable results in the treatment of burns of the first and second degrees by covering the affected parts with a thick layer of a paste prepared by mixing calcined magnesia with a certain quantity of water, leaving it to dry on the skin. In proportion as dried fragments become detached they are replaced by fresh paste. The pain ceases immediately after the application of the moist paste, it is stated; and under the protective layer of magnesia the wounds heal without leaving any trace of the cutaneous pigmentation which is so frequently observed after burns are exposed to the air.

Water for Hypodermatic Purposes.—Take of boiling hydrant water one gallon, to which add one-eighth grain of potassium permanganate which has been dissolved in one ounce of water; mix well, allow to stand one hour, and if the water loses the light pink color, add another portion of potassium permanganate, and in this manner continue until it retains a delicate tint from the salt. Then add three grains of alum, shake until dissolved, and allow to stand until the precipitate subsides, and until the tint from the permanganate has disappeared. The process is hastened by frequent shaking. Filter three times through a double thickness of white filter paper, which has previously been scalded, to render it sterile. The process should be conducted in well-closed glass containers, and during filtration the funnels should be covered with well-fitting rubber covers. The finished product should be kept in absolutely clean, well-stoppered bottles, and before using the lip of the bottle should be carefully freed from dust, and every care should be exercised to keep it clean and sterile. Water thus prepared has kept sterile for as long as six months; it, moreover, causes no abscesses where proper attention has been given to the syringe in making hypodermatic injection. —*Western Druggist.*

Abdominal Section for Perforating Gastric Ulcer.—R. C. Kirkpatrick (*Canada Medical Record*, August, 1897) reports the case of a patient who was taken ill on March 3, complaining of intense pain in the upper part of the abdomen. She had previously been in good health, with the exception of a slight amount of indigestion. On this morning she had gone to her work as usual, and about eleven o'clock was suddenly seized with intense pain in the region of the stomach. She became very faint, but did not lose consciousness. She was conveyed to her home, where the doctor saw her shortly after one o'clock. At that time she was pale, with a rapid pulse and subnormal temperature. On examination, the whole abdomen was tender, but the point of maximum tenderness was in the epigastric region. She was removed to the hospital, and at three o'clock, four hours after the onset of the attack, the abdomen was opened. Stomach-contents escaped as soon as the peritoneum was through, and a short search revealed a perforation in the anterior wall of the stomach, four inches from the cardiac orifice and near the lesser curvature. The opening was about the size of a bean. The edges were drawn together by a row of continuous sutures and then inverted by a double row of Lembert sutures. The peritoneum in the vicinity was cleansed by sponging, no irrigation being used. A drain was inserted and the abdomen closed. A glass drainage-tube was inserted into the pelvis through a small opening made just above the pubes, and from this latter opening fully a pint of turbid serous fluid escaped. The upper tube was removed in twenty-four hours and the lower tube in forty-eight. In twelve hours small quantities of hot water were given by the mouth, and in twenty-four hours milk and lime-water were given. The patient made an uninterrupted recovery.

An interesting **experiment in toxicology on a large scale** was carried out last week near Liverpool. It appears that a "rogue" elephant escaped from the city in question, and was captured some miles away at a village, where it was decided to put the animal to death. The first attempt was made with aconitin, with which powerful active principal a carrot was stuffed and administered to the poor beast. As a matter of fact, however, the drug appeared to have no effect whatever, and after a prolonged wait it was resolved to try prussic acid. A large brass syringe was filled with the poison and emptied into the mouth of the elephant, but the sagacious creature immediately washed out his mouth with a draught of water. On a second and third attempt most of the poison was swallowed, and three hours later the animal fell over on its side dead. Considering the usually instantaneous effect of hydrocyanic acid, this delayed action is not a little remarkable, and may possibly be explained by slow absorption. It seems hardly likely that the nerve centers of the elephant could be so peculiarly constituted as to resist the poison.—*Med. Press.*

Baronaki (*Gazette des Hopitaux*) states that **theobromin in the asystole of old people** rapidly causes a diuresis amounting to 4, 5, or 6 litres, and wards off the symptoms of uremia. This marked diuresis is especially noticed in the chronic asystolia so frequently observed in old people accompanying edema, anasarca, and ascites. In the pulmonary or hepatic forms theobromin does not seem to have the same diuretic action. Diuresis may come on the very evening of the administration of the drug, but most frequently the following day. It leads to a marked improvement, the signs of uremia disappear rapidly, the respiration becomes better, and the patient is out of danger for some time. The most marked diuresis is obtained when the use of theobromin has been preceded by digitalis. Association of theobromin with caffein or with salicylate of soda does not give better results than theobromin alone. The author recommends large doses; with 30 grains no appreciable diuretic effect is obtained, 45 grains being necessary; while 60- or 75- grain doses do not increase the diuretic effect. When the dangerous symptoms have disappeared, the theobromin should be discontinued and iodids given. Dr. Baronaki has noticed, as inconveniences of the prolonged use of theobromin, vomiting, nausea, vertigo, and phenomena of excitement. He has also observed an increase of the quantity of albumin in the urine.

Exner (*Vienna Klinische Wochenschrift*) states his belief that the bodies of our ancestors were totally covered with hair, and that its present disappearance is due to the fact that its absence was regarded as a beauty, and hence that, in the choice of mates, preference was always given to those that had the least of it. "As to the **physiological functions of hairs**, it is admitted that they are modified sense organs which have lost all connection with the nerves. It is probable that in primitive man the distribution of the hair upon the body was irregular, and that the length, color, structure and thickness of the hair varied with functions for which it was intended. The hair which has been left upon the body in the process of evolution has been left there for a definite purpose. Certain hairs serve as organs of touch, notably the eyelashes, the bulbs of which are surrounded by a network of nerve fibres, and in a less degree the hairs of the eyebrows. Both these serve to protect the eyes; for, being sensitive, they give warning of danger, so that reflex closure of the lids is produced. The eyebrows also prevent drops of sweat from running into the eyes, while the eyelashes keep out dust. In animals the hair serves to maintain and regulate the heat of the body, but in man the hair of the scalp alone serves this purpose. Hair is itself a poor conductor of heat, and retains air, also a poor conductor, in its interstices. The fact that the forehead is not covered with hair Exner explains on the theory that in the contest between the natural tendency of the hair to protect the head against changes of temperature and the tendency of human nature toward beauty, the latter has prevailed more easily, because the non-conducting properties of that portion of the skull are increased by the air-containing frontal sinuses, and that that portion of the head is easily protected from the heat of the sun by inclining the head forward." —*Boston Med. and Surg. Jour.*

In speaking of the comparative merits of different **operations for vesical calculus**, John B. Deaver says that litholapaxy is applicable in nearly all cases of stone.

The most important condition which would interfere with this operation is stricture in the anterior or deep urethra, still with Otis' urathratome, this difficulty can be obviated.

Stricture of small caliber in the deep urethra is no contra-indication for the operation of litholapaxy, but if the deep urethra cannot be restored, the operation is out of the question.

If the stone is large, perineal lithotomy is the operation. In case of large calculi, in old men with enlarged prostate, it is better to do a suprapubic lithotomy; this also is the operation that should be selected by those who deal with stone in the bladder but occasionally.

In children under thirteen years of age, litholapaxy should not be done on account of the high mortality, and again the urethra is rarely so large as to permit the passage of an instrument, cystitis is frequently set up by the operation.—*Internat. Jour. Surg.*

Dr. Noel recently wrote a thesis on cancer which has attracted the attention of scientists. In his opinion, **cancer is due to vegetable germs** which infect the human system eitner by manual contact or through absorption or inhalation of the poison with water or food. According to statistics, cancer prevails more in districts surrounded by forests and along the banks of rivers than in places where vegetation is scarce. Noel began a careful investigation around his home, at Lyons. Birch, elm and willow trees predominated. He tested sap from thousands of trees, and in a score of specimens found cancerous germs. A dog, inoculated with these, in a few days showed every symptom of cancer. Noel states that the percentage of deaths from cancer is much greater among persons whose business it is to handle wood and vegetation than those employed in trades where wood is not used. Further, that the malignant, boil-like growths frequently found on trees are infectious. Several of these often appear on one limb, and are evidently communicated from one spot to another. Insects, especially large wasps, transmit the germ from tree to tree, and from tree to man. Water is a good medium for distributing the disease. The stomach and intestines are likely to be affected if the germ is taken with water or food. If introduced by the fungus the growth is apt to show in the mouth or nose.—*Inter Ocean.*

The following procedure is recommended by Duyk for the preparation of **iodid pills which will keep for some time**: Potassium iodid, gram 7.70, is triturated with gum benzoin, gram 2.30, and converted into a pill mass with aid of a few drops of alcohol. This is divided into one hundred pills, of ten centigrams each. According to the author, these are readily dissolved in the fluid of the stomach. Another plan, suggested by Lang, is to triturate twenty grams of the iodid with ten grams of sugar of milk, to which six grams of lanolin is then added, to make one hundred pills. It is claimed that the iodid in this form is but little irritating.—(Le Scalpel) *Med. Record.*

Pellman, of the University of Bonn, tells of a notorious drunkard who died in 1800. Her descendants numbered 834, and 709 of them have been traced. Of these, 7 were convicted of murder, 76 of other crimes, 142 were professional beggars, 64 lived on charity, and 181 women of the family were prostitutes. This single family cost the German Government, through its courts, almshouses and prisons, no less a sum than $1,250,000.

Anesthetic Mortality in Germany.—According to Dr. Gurlt, of Berlin, the total number of patients anesthetized during 1895 and 1896 was 58,769, and of these 32 died, the proportion of deaths being therefore one in 1836. The statistics for the last seven years comprise 327,599 cases of anesthetization with 134 deaths, or one death in 2444. The proportion of deaths with pental was one in 230; with chloroform, one in 2039; with Billroth's mixed method (morphin, chloroform, and alcohol), one in 3807; with ether, one in 5090; with ethyl bromid, one in 5228; and with mixed ether and chloroform anesthesia, one in 7594. Ether narcosis, as usual, was responsible for a certain number of cases of bronchitis and pneumonia. In addition, cases have been reported in which exanthemata followed the use of this anesthetic. Interesting as are all statistics bearing on the anesthetic death rate in various countries, their practical value is reduced almost to zero by the absence of information bearing on the methods of administration in respect of each agent. Moreover, these figures appear to comprise only hospital cases, and they would doubtless have to be greatly modified were returns forthcoming of the mortality in private practice.—*Med. Press.*

In suspected drinking water for persons who cannot command chemical analysis, the following **simple tests for the purity of water** are recommended as being generally available and reliable:

Fill a bottle made of colorless glass with the water; look through the water at some black object; the water should appear perfectly colorless and free from suspended matter. A muddy or turbid appearance indicates the presence of soluble organic matter, or of soluble matter in suspension. It should be "clear as crystal."

Empty out some of the water, leaving the bottle half full; cork up the bottle and place it for a few hours in a warm place; shake up the water, remove the cork, and critically smell the air contained in the bottle. If it has any smell, and especially if the odor is in the least repulsive, the water should be rejected for domestic use. By heating the water to boiling, an odor is evolved sometimes that otherwise does not appear.

Water fresh from the well is usually tasteless, even though it may contain a large amount of putrescible organic matter. Water for domestic use should be perfectly tasteless, and remain so even after it has been warmed, since warming often develops a taste in water which is tasteless when cold. If the water, at any time, has a repulsive or even disagreeable taste, it should be rejected.

The delicacy of the sense of smell or taste varies greatly in different individuals; one person may fail to detect the foul contamination of a given water, which would be very evident to a person of a finer organization. But if the cause of a bad smell or taste exists in the water, the injurious effect on health will remain the same, whether recognized or not. Moreover, some water of very dangerous quality will fail to give any indication by smell or taste. For these reasons sanitarians attach special importance to Heisch's test for sewage contamination or the presence of putrescible organic matter. The test is so simple that anyone can use it. Fill a clean pint bottle three-fourths full of the water to be tested, and dissolve in the water a teaspoonful of the purest sugar—loaf or granulated sugar will answer—cork the bottle and place it in a warm place for two days. If in twenty-four to forty-eight hours the water becomes cloudy or muddy, it is unfit for domestic use. If it remains perfectly clear it is probably safe to use.—*Health.*

Preservation of Hydrogen Dioxid.—Sunder states (*Pharm. Ztg.; Am. Med. and Surg. Bull.*) that the addition of 2 per cent. of alcohol or ether serves to keep hydrogen-dioxid solution perfect for several weeks, and that the preparation suffers no loss of oxygen in that time, as shown by the control tests made by Freyss. He states that the substitution of these for the diluted sulphuric acid heretofore used is especially valuable in so far as the disturbing element so frequently introduced by the acid may be avoided; and this is particularly the case where the medicinal hydrogen peroxid is in question.

The value of **sun-heated sand as a therapeutic measure** has been known for many generations, but receives at present very little professional attention. The ease with which a hot-sand bath may be carried out at most ocean resorts, and the benefit which follows its use in cases of obstinate joint affections of rheumatic, gouty, or syphilitic origin, as well as in chronic troubles of liver, spleen, kidney, and pelvic organs, is so great that it ought to be more frequently employed. A temperature of 120° to 130° F. is readily borne, and the best costume for the treatment is the ordinary bathing-suit. The patient should be directed to change his position and location every ten to twenty minutes, and the bath should be continued for two or three hours. Parker has also found it of value in the wasting diseases of childhood.—*Med. Times.*

Dr. J. Lewis Smith kept records of the average time of **appearance of the teeth** in children at the out-door department of Bellevue Hospital, excluding cases of rickets, which are most common in Italians, and next, in negroes. In 200 infants without signs of rickets the first tooth had appeared as follows: In three infants at two months, in 20 at five months, in 24 at six months, in 37 at seven months, in 28 at eight months, in 20 at nine months, in 14 at ten months, in 15 at eleven months of age. Yet Sir William Jenner had said that if a baby did not get its first teeth by the ninth month it indicated rickets.—*Med. Rec.*

The United States Department of Agriculture, Division of Chemistry, has sent out the following circular in the endeavor to prevent food and drug adulteration:

"Under authority of Congress the Department of Agriculture is investigating the extent and character of food and drug adulterations, and is desirous of securing all the information possible on the subject. Having been appointed special agent to inquire into and report upon this matter, the undersigned writes to request that you kindly furnish the department all the information you have in regard to adulterations, together with any suggestions as to the best remedy for the evil.

"1. Do you know of any new adulterant? If yes, state what, and how used.

"2. Would a national food and drug law assist in preventing adulteration?

"3. Would uniform food, drug and pharmaceutical laws tend to promote efficiency and purity?

"4. Please suggest what would best promote the interests of consumers and legitimate manufacturers and dealers.

"5. What is your opinion as to the extent of damage done legitimate business by imitation of brands, packages, etc.?

"6. To what extent do sophistication, misbranding and injurious adulteration exist?

"7. Have State laws aided in preventing adulteration? To what extent?

"8. Would a national law assist State officials in properly executing the local laws?

"9. Have adulteration, sophistication and misbranding increased or decreased?

"Prompt replies to the above, together with any other information or suggestions, will be highly appreciated.—A. J. Wedderburn, Special Agent."

Arrest of Hemorrhage in Hemophilia by the Application of Healthy Blood.—Bienwald has employed a very original method in the case of a child, aged two years, the subject of hemophilia. Having failed to arrest the hemorrhage from a small wound on the face by the application of perchlorid of iron, he obtained some blood by aspiration from a healthy subject and deposited it on the wound. In a few moments it coagulated and the hemorrhage at once ceased. His explanation of the action of the remedy is that it supplies the ferment necessary for thrombosis in the small vessels. Whether this is correct or not is impossible to say in the absence of definite knowledge of the pathology of hemophilia. As affording his explanation some support we may mention the success obtained by Wright in his experiments with a solution of fibrin ferment and chlorid of calcium as a styptic. Bienwald's ingenious method certainly deserves a trial.—*Lancet.*

At the last examination of the **Pennsylvania State Medical Board,** 445 candidates appeared, of whom 83 failed and 4 were expelled for copying.

Edward W. Wright (*New York Medical Journal,* September 11, 1897,) states three chief theories regarding the pathology of **writers' cramp**:

1. A local disease; a weakness in some muscles permits the over-action of their antagonists, which increases the spasm.

2. A reflex action; the result of the stimulation of the sensory nerves in the act of writing.

3. A central origin; a want of proper balance in the co-action of the motor centres concerned in the action of writing.

The latter seems to be the most satisfactory. In the muscular group of the eyes we can have all of the causes present. If the causes be present in the ocular muscles that produce writers' cramp in the hand of writers, can we not have cramp in the muscles involved in reading?

Constant tension of all the ocular muscles at close range for long periods of time, with a weak individual muscle or pair of muscles, with overtaxed nerves, and an exhausted cortex, are the prominent conditions that would lead to spasm or cramp of the ocular group of muscles.

Potassium iodid is badly tolerated in some instances of hepatic disease. The sodium salt may prepare such patients, as well as those in whom depressing effects result from the potassium iodid, for the subsequent favorable use of the latter.—BRIQUET.

Treatment of Pigmentary Nevi.

℞.—Hydrarg. chlor. cor.
Sacch. alba.
Vitelli.
Suc. Limon.
Aquæ destil.

M.—S. Apply night and morning.

It is reported that a Chicago druggist has been condemned by a jury to pay $1500 damages for the **mistake of a prescription clerk** who used carbolic acid in a lotion for inflamed eye-lids, and destroyed the sight of one of the eyes of a little child. Another druggist of the same city fares worse, a verdict for $8000 being given against him, because one of his clerks sold corrosive sublimate for calomel.—*Med. News.*

NEWS AND MISCELLANY.